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CARCINOMA OF THE UTERUS: ITS EARLY DIAGNOSIS AND TREATMENT*

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Carcinoma is the uncontrolled proliferation of immature epithelial-like cells which develop and differentiate to only a varying degree, but which never reach full maturity. Carcinoma is always a new growth and may originate wherever there are epithelial cells such as cover the body, line its cavities or are functional in its many organs.

Etiology

Many theories have been advanced as to the cause of cancer, none of which are satisfactory, as none can be proven. We might just mention such theories as congenital cell rests, infections by ultra-microscopic organisms, inheritance, chronic irritations of normal cells, etc. Hoffman[21] holds that only faulty dietary habits and food stuffs can explain the tremendous increase in gastric and intestinal cancer, which, however, does not explain the increase in breast and genital cancer in the female. These, he suggests, may be due to fundamental biological changes resulting from changes in sexual life and habits.

Cancer is not infectious or contagious. No doctor or nurse has ever been known to contract the disease in this way. Maude Slye has done some wonderful experimental work showing the influence of inheritance in rat and mouse cancer, but unfortunately we cannot control the breeding of humans sufficiently to learn whether or not her results apply to man. It is true that members of the same family, living closely associated, with similar habits, do develop cancer, but is this due to environment, inheritance, or, with the frequency of cancer, just to a mathematical probability?

Cancer is distinctly a disease of opulent civilization. Primitive people the world over are almost free from malignant tumors, although non-malignant tumors are not uncommon. In 1921, only 28, or 3.2 per cent, of 876 North American Indian women died of cancer, 9 of which were of the genitalia. The susceptibility of primitive people to malignant tumors seems to increase only with their contact with civilization and their adoption of civilized habits and customs.

In all probability no single factor is responsible for the development of cancer, but one or more of a multitude of conditioning circumstances resulting in long continued chronic irritation usually exists. Hoffman[23] shows statistically that certain occupational incidences of cancer are here important. Percival Pott, in 1775, first drew attention to chimney sweep's cancer. The frequency of cancer of the lungs in certain classes of miners, of the bladder in chemical workers and dyers in textile industries, of the skin in certain occupational diseases, x-ray and radium workers, is well known. The occu-

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pational risk is probably only one of several predisposing causes. In San Francisco, of 3,462 cancers, only 1.8 per cent were of the skin, so that exposure to weather is not here significant. In only 2.23 per cent of 762 cancers was there any history of a single trauma, which, therefore, cannot be held important, and in the majority of such reported cases, the etiology of trauma cannot be scientifically established.

Cancer never starts in normal healthy tissues or organs. It always begins at one minute focus, the cells of which at first are normal, but under the influence of chronic irritation, they eventually become malignant. Recent findings indicate that definite but early cancer may remain quite inactive for as long as 8 to 10 years and then suddenly by some unknown influence start to proliferate with great rapidity. Hofbauer[20] has described some occasional epithelial hypertrophies which occur in the cervix during pregnancy and which may be the forerunners of later malignancy.

Mortality

May I be pardoned if I stray slightly from my specific subject and give you just a few facts about cancer in general? The vital statistics of the U. S. Registration Area are a very reasonable and dependable source of much valuable information, and Fred L. Hoffman,[22] statistician for the Prudential Insurance Company, has from this source, as well as others, given us some most interesting and startling figures.

In the first place, there are at least 150,000 deaths annually in the United States and Canada from malignant growths (Martin[30]). The death rate has more than doubled in the past 20 years, and is increasing at about 2.5 per cent each year. Deaths from all other causes, except diseases of the cardio-vascular system, show a steady decrease. Cancer is the scourge of civilization and presents the most serious menace to the health and life of civilized people.

This alarming increase in mortality continues in spite of the enormous amount of work being done by innumerable brilliant investigators to check the ravages of cancer from any and every angle. Though most carefully considered, this increasing mortality cannot be attributed to more efficient and correct modern diagnosis, and it continues irrespective of the fact that increasing thousands are saved annually by appropriate medical treatment.

The proportion of cancer deaths varies considerably in different sections of the country and in general is higher in large cities. In 1933 the mortality ranged from 17.0 per 100,000 population in Hamtramck, Michigan, to 176.2 in Boston, Massachusetts, and to 304.2 in Madison, Wisconsin. The average at present for the entire country is about 120.0 per 100,000 population.

There is also a marked variation in the number of deaths from cancer of different organs. The mortality per 100,000 population for the registration area in 1927, by organs affected, varies from 0.7 for the larynx to 34.0 for the stomach and liver, as shown by the following table:

0.7	Larynx
2.5	Skin
2.9	Buccal cavity
3.0	Bladder
3.5	Prostate
8.8	Female breast
13.8	Female genitals
14.0	Intestine and Rectum
34.0	Stomach and liver

Although cancer is seen from early infancy to advanced old age, it is more especially a disease of middle and late life. The average age at death from cancer is 59 years for males and 58 years for females; from the ovary 49.5, uterus 55.3, breast 57.1, and the vulva 60.3 years. The increasing mortality cannot be attributed to the increasing average age of the population at death. The elderly are more often affected, because the time element of long continued irritation is required for cancer development. As a rule, the younger the patient, the more malignant the disease.

The sex variation of cancer deaths shows three women die to every two men. One woman out of every eight, and one man in twelve, who reach thirty-five years of age, dies of cancer. The following table of proportionate deaths by sex and organs is of particular interest from the standpoint of chronic irritation as an etiological factor.

	Buccal Cavity	Tongue	Gall-bladder	Breast	Bladder
Male	2,132	555	3,475	89	1,707
Female	478	98	5,300	6,927	712

In 1920 the mortality in the U. S. from cancer of the female genitalia was 12.3 per 100,000 population; in 1931, 13.8, of which

the rate for the uterus was 12.1, ovary 1.3, and vulva and vagina, 0.4, *accounting for the deaths of more than 18,000 women.* During approximately the same time, cancer of the breast increased from 7.6 to 9.6 per 100,000 population, *accounting for 11,500 deaths.* Just stop for a moment and think of the horror of this fact, 30,000 women, most of them in their prime of life, domestically, maternally and industrially, sacrificed every year to but these two types of cancer; and what makes the situation all the more deplorable is that a very large proportion of this vast army of courageous women could be cured permanently and saved by proven means of treatment at present at our disposal, if they could only be seen and cared for early in the course of their disease.

Carcinoma of the Uterus

Carcinoma of the uterus is almost always primary. It may originate in the cervix or fundus. In the former location, it may be either squamous in type or more rarely glandular; in the fundus, it is almost always adenomatous. The averages from many large clinics show that 90 per cent of all uterine carcinoma is in the cervix, and 10 per cent in the fundus. Ninety-five per cent of all women with cervical cancer are married and 93 per cent have been pregnant. With cancer of the fundus, about one-half occur in nullipara. Carcinoma of the cervix is more common before the menopause, 10 per cent occurring before the age thirty-five, and 20 per cent before age forty. Cancer of the fundus is more common after the menopause, although 5 per cent occur before age forty.

A matter frequently discussed recently is the development of cancer in the stump of the cervix left at a former supracervical hysterectomy. The following table may be of interest.

Careful analysis will reveal that a majority of these cases showed carcinoma relatively soon after the former operation. The truth of the matter is, that due to carelessness or lack of training, many, if not most, of these cancers were overlooked at the time of the former operation, and now, realizing how long carcinoma may lie dormant, this contention is given further support.

These reports open for discussion the controversy of complete hysterectomy versus supracervical amputation of the fundus. I am personally convinced that in the hands of the majority of operators the complete operation is attended by a much higher primary mortality and by far more postoperative complications, which greatly outweigh the benefits of the major procedure. The cervix should always be carefully examined, and if its condition cannot be made satisfactory by conservative measures, cauterization, trachelorrhaphy, or even amputation, it should be removed. Otherwise, it should be appropriately dealt with and not routinely removed. More women will die as a result of the routine removal of the cervix than will subsequently develop cancer in this location.[15]

Diagnosis

At present the diagnosis of carcinoma of the cervix is unfortunately usually a simple matter. Cases do not present themselves for treatment any earlier than they did twenty years ago. Symptoms have existed for from three to six months or longer, and the cervix is grossly involved by the new growth. Here the diagnosis is unquestionable.

We are here chiefly concerned with the diagnosis in the early cases, for which there is more hope of a permanent cure. An accurate history should always be taken: age, marital state, parity, family history of inheritance, and particularly the menstrual history, should be carefully noted. The importance of several of these factors has already been discussed. Abnormal vaginal bleeding is the most constant symptom of cancer of the uterus and is present in over 70 per cent of all cases. The periods may

Author	No. Cerv. Ca.	No. Stump Ca.	Time after Oper.
MacFarlan and Howe[20]	259	12	4 in 1 yr.
Johnson and Tyrone[25]	959	21	Most 1 to 2 yrs. 1 to 17 yrs.
Mayo[33]	In 20 yrs.	99	44 within 3 yrs.
Spencer[42]	European Clinics	3%	of all cervices left
Forgue[14]		1%	Cervices after fibroid
Spencer[42]	900 Hyst. Fibroids	2%	Unrecognized ca. cervix

be prolonged, increased in volume, or occur too frequently. Bleeding between periods, even though slight in amount, and especially if after intercourse or douching, is very significant. Bleeding after the menopause, irrespective of the amount, is very suggestive, carcinoma being found in upwards of 65 per cent of such cases, particularly in the fundus of elderly women.[27] A degree of anemia is often met with which cannot be accounted for by the bleeding alone.

Physical Examination

The routine physical examination should always be made and the patient's general condition noted. The pelvic examination is of course of chief interest. After determining the size, shape, consistency, position and mobility of the cervix and fundus and the adnexæ, the cervix should be well exposed and most carefully examined.

On the normal cervix the vaginal mucosa should end sharply at the external os. With a simple eversion of the epithelial lining of the cervical canal, or ectropion, there is no loss of tissue and rarely any infection, and this condition in itself does not often predispose to cancer. An erosion is an infected ulcer with loss of tissue, which usually occurs at the site of an old laceration. Such ulcers are chronic, difficult to heal, and often break down repeatedly. Due to the chronic irritation and poor blood supply of such ulcers, or, if they heal, in the zone between them and the mucosa of the cervical canal, atypical cellular changes take place, giving rise to small nodules of keratinized epithelium or a leukoplakic condition, which often precedes cancer development.

The gross appearance of the advanced lesion is either a papillomatous fungating mass or a sloughing crater-like ulcer, with infection, free bleeding and foul discharge in either case.

The earlier stages of these conditions present diagnostic difficulties. The break in the mucosa may be very slight and difficult to differentiate from a small benign ulcer. Gentle pressure with a blunt instrument, provoking free bleeding (Chrobak-Clark sign), suggests carcinoma. Contact bleeding of carcinoma is freer than from erosions.

The earliest of cervical malignancies unfortunately produce no symptoms. There is no break in the epithelial covering, and the small circumscribed nodules may often be seen only by means of a strong light and magnification, as with the colposcope of Hinselman. These nodules appear as small, white, pearly, opaque, dull, slightly rounded, sometimes wrinkled areas in the smooth, glistening, transparent epithelium of the cervix, and are often described as leukoplakia. However, many such areas are really early cancer. Histologically, leukoplakia shows a picture varying from epithelial hyperplasia to cellular malignancy, but without invasion. The loss of layer formation in the stratified epithelium strongly suggests malignancy. Cancer often develops in such areas and Martzloff[31] questions if this is not really a very early latent cancer.

How can we make certain that any suspicious area is, or is not, carcinoma? By means of biopsy. Schmitz,[41] Davis,[13] Broders,[8] Graves,[16] Jones,[26] Schiller,[40] in fact, practically all modern authorities, agree that this is the only means of positive early diagnosis. Although quite generous pieces of tissue should be excised for such purpose, the entire cervix cannot be utilized, so that it becomes exceedingly important to determine from what area to make such excisions. Schiller has devised a simple, quick and inexpensive means of locating such suspicious areas. Lahm found that the upper layers of normal cervical squamous epithelium were rich in glycogen, and therefore rapidly stained a deep mahogany brown, almost black, with Lugol's solution (iodine 1, potassium iodide 2, water 300), whereas cornified epithelium or cancer cells, containing no glycogen, did not stain but remained sharply demarcated whitish or pinkish areas.

The test is simple. The cervix is exposed and gently wiped clean of all mucus, then thoroughly saturated with Lugol's solution for one to two minutes, after which the excess of Lugol's is gently removed with cotton sponges. The stain does not take on everted glandular epithelium, and ulcers and erosions stain but lightly, appearing as light brown, velvety red areas. Traumatically desquamated areas do not stain and their shape helps to differentiate them. Hyperkeratotic areas, due to prolapse, leukoplakia or lues, do not stain well, but finally, unstained, sharply outlined areas may indicate the earliest known incipient stages of carcinoma. Knowledge gained from accumulated clinical experience is very important in differentiating these areas. When such an area is located, Schiller only scrapes away the

mucosa and stains it for histological examination, but the majority of pathologists prefer a liberal excision with a sharp knife. At biopsy, at least two areas should be excised and both pieces examined before a negative report is given, as only one of several may be positive for cancer.

In all unexplained vaginal bleeding, especially postmenopausal, a diagnostic curettage should be done, and the scrapings examined grossly and microscopically just as in case of biopsy of the cervix.

It is extremely important that the pathologist be expert in the interpretation of early malignancy. I personally always examine such sections myself and assume full responsibility for the diagnosis, and I feel that every gynecologist should do likewise, since this is a very specialized field of pathology and serious mistakes may be made by excellent general pathologists. Serial sections should always be made later of all specimens removed, as a small malignant focus might otherwise be missed.

TeLinde[43] has emphasized the fact that many women and more uteri are sacrificed by failure to recognize as non-malignant certain confusing cellular changes which often occur in the uterus, varying distinctly from the normal, but quite benign in character.

By direct extension, squamous epithelium may replace columnar epithelium destroyed by inflammation. Metaplasia, or the development of embryonal cell rests, may replace columnar with squamous epithelium. Benign squamous epithelium may invade the deeper tissues or grow up into the uterine cavity, especially of old women, often giving an adenomatous appearance. Healing wounds, chronic ulcers and inflammatory tissue often show penetrating benign epithelium. High power magnification and oil immersion study of the individual cells are often necessary to differentiate such confusing benign patterns from early malignancy.

A benign condition is indicated by the failure of cells to break through the basement membrane or to show any tendency to invade, also by the regularity of the individual cells as well as their nuclei, in size and shape, and the uniformity of their relatively light staining. Mitotic figures indicate rapid cell division, but alone are not indicative of malignancy. Such figures are often seen, especially post-menstrual and with glandular hyperplasia. Retention of the normal differentiation of squamous epithelium into basal, transitional and spinal layers, especially when there is no thickening of the papillæ, suggests benignancy, but metaplastic epithelium may not show such differentiation.

Malignancy is indicated grossly by loss of the normal pattern of the epithelial layers, by thickening and irregularity of the papillæ, and by any tendency of the cells to invade the surrounding tissues; also by the presence of a zone of acute inflammation with leukocytic infiltration closely adjacent. Irregularity in the shape and size of the individual cells and their swollen nuclei, inequality in their staining, hyperchromatic nuclei and the presence of mitotic figures, all indicate malignancy. Cells which are apparently crowded, atypical and anaplastic, that is, resemble embryonic or immature cells in appearance, are always to be viewed with suspicion. What has been said applies equally well to glandular and squamous epithelium.

Carcinoma is a primary disease of epithelial cells, and as Broders[8] has emphasized, if seen early enough, will be seen *in situ,* that is, will not as yet have spread beyond the location where their ancestors were found before they underwent malignant transformation by a process of dedifferentiation or anaplasia. Here, the diagnosis must be made entirely upon cellular changes, rather than upon gross epithelial pattern. Adenocarcinoma may completely replace the normal cells of the glands before invasion occurs, but squamous carcinoma rarely so completely replaces the protective epithelium before invasion.

Through the stimulation of long continued irritation, cancer starts in a single cell of the basal layer of the squamous epithelium. This cell produces a virus or other stimulant of adjacent normal cells to cancer change, by so-called assimilation. The process first extends laterally, without elevation of the surface or invasion of the deeper tissues, but with thickening or clubbing of the papillæ, and, being wider at the base, meets the adjacent normal epithelium always on an oblique line, as pointed out by Schiller.[40] This is the cancer *in situ* of Broders. After a variable latent period, multiplication of the cancer cells eventually starts, with an eleva-

tion of the surface, ulceration, penetration, etc.

Prognosis

The probability of permanent cure of cancer of the uterus depends chiefly upon the extent of the local lesion and the timeliness of treatment. Unfortunately, most cases are far advanced when first seen by those fitted to render appropriate treatment. All cases are roughly graded into four clinical groups:

1. Early—localized. Small area not over 1 cm. and very early or no ulceration.
2. Moderately advanced and doubtfully localized. May involve one-half of the cervix only, surrounded by a red, inflamed edematous area and with some limitation of motility.
3. Advanced—with invasive growth, parametrium thickened, uterus fixed, and lymphatics and vaginal walls involved.
4. Very advanced—with large crater ulcer or a fungating mass, frozen pelvis, and with involvement of bladder or rectum.

We might add a Group 5:

5. Recurrent, after former operation, with a varied degree of local involvement.

Burnam[9] for 1,578 cases of cervical cancer gives the following table as to the stage of the disease:

Operable (Early)	9.37
Inoperable	61.40
Recurrent	19.13
Palliative (Advanced)	6.27
Prophylactic	3.8

Healy[18] for 1,574 cases from the Memorial Hospital gives 12.5 early, 12.0 borderline, 75.5 advanced.

Johnson and Tyrone[25] in 926 cases found only 11.5 per cent classified as early, and in only one-third had symptoms existed for less than three months. Crossen[12] found only 3 early cases out of 121 examined.

A perusal of the findings of numerous authorities gives an average for cervical cancer when first seen of not over 10 per cent early, 60 per cent moderately advanced to advanced, and 30 per cent advanced, recurrent, et cetera. Carcinoma of the fundus extends much more slowly, and is therefore more amenable to treatment, 40 to 70 per cent having a fair chance of cure.

Broders, Martzloff, and others, have attempted to make a prognosis and regulate treatment in individual cases, depending upon the degree of cellular malignancy as found at biopsy. This is only moderately successful, for, as Jones points out, the cellular characteristics often vary in different areas of the same growth. There is also a considerable personal element in such classifications, which in addition do not always run true to form.

Treatment

During the past twenty years the treatment of carcinoma of the uterus has become almost standardized. The great majority of authorities agree on all major points and have but slight personal variation in most minor details.

Carcinoma of the cervix—Practically all American surgeons, and most European operators, now agree that the best results are obtained in this condition by the local use of radium followed by deep radiation. The 5-year end-results are better or equally good and there is practically no primary mortality as compared to 6 to 25 per cent following radical abdominal panhysterectomy. Radical operation is therefore rarely justified, and then only in the very early cases. Radical vaginal panhysterectomy has found but little favor in this country though being used seemingly successfully by some continental surgeons.

The means of cure by radium is due to the fact that the carcinoma cells are more readily affected and killed by the radium rays than are the mature normal tissue cells. It holds generally that the more embryonic and immature the cells, the more malignant they are and the more readily they are affected by radium. The marked stimulation to the formation of connective tissue and the resulting decrease in vascularity and nourishment to the malignant cells is also an important factor.

Radium is used in three varying ways: (1) Small doses over a long period of time; (2) moderate doses, repeated; (3) large doses, quickly. When an adequate supply of radium is available the majority of authorities prefer a single large dose. I cannot for want of time go into the details on the somewhat complicated technic, dosage, filtration, etc., but may say that a single dose of 3,500 to 4,500 m.c.h. given in less than twenty-four hours seems to be the maximum and most effective dose not to be followed by an unusual number of complications.

Post-radiation complications which must be considered are cellulitis, from the implan-

tation of needles; hemorrhage, which may also be from the disease itself; stricture of the cervix, with subsequent pyometria; damage to the bladder, ureters or rectum, with subsequent strictures, ulcers, hemorrhage, and fistulæ. Proper dosage, filtration and application will reduce these complications to a minimum, though, when they do occur, they should be appropriately treated. All patients should be warned in advance of such possibilities. This will avoid possible future lawsuits and unpleasantness.

All cases seen, except those very advanced with fistula formation, should be given the advantage of treatment from the standpoint of palliation, if not of cure. Marvelous improvement and even permanent cure is sometimes seen in apparently hopeless cases. All local evidence of the disease disappears, the bleeding and foul discharge stop, pain and anemia decrease, and the patient's general and mental condition is remarkably improved. Likewise, local recurrences in the vaginal and rectal walls, and in the cervical stump postoperatively, should all have the possible benefit of re-radiation.

Uterine carcinoma progresses chiefly by direct extension. It does not metastasize early. A larger percentage of radiated cases show metastases than do untreated or operated cases, but, as Jones[26] and Phillips[36] point out, such cases live longer and have time to develop such distant growths. As shown by Warren,[45] ureteral obstruction, anemia and toxemia are the more usual direct causes of death.

The end-results depend upon the extent of the disease when first seen, the degree of malignancy, and the effectiveness of the treatment. The following table of five-year cures by several operators for all cases seen, average 20 to 25 per cent. Here again the great advantage of early treatment is seen, cures ranging from 55 to 83 per cent in early cases.

	No. Cases	5-year cures percentage		
Crossen[12]	121	22.3		
Burnam[9]	1,578	54.73	early cases	
		11.35	late	Average 15.96
		11.25	recurrent	
Jones[26]	303	25.0		
Lynch[28]	192	19.3		
Ward and Farrar[44]	223	25.1		
Schmitz[41]	156	83.33	early	
		42.85	mod. adv.	Average 22.43
		26.23	advanced	
		4.35	far adv.	
Healy[18]	1,574	55.0	early	
		34.6	borderline	Average 22.5
		15.0	late	

Cancer of the fundus—In this location the disease remains localized longer than it does in the cervix and the results of treatment are much superior. If there is no evidence that the disease has extended beyond the fundus, surgery is indicated, though lately radium treatment alone is advocated by some eminent authorities. Bowing and Fricke,[7] from the Mayo Clinic, report that of 189 fundal carcinomas, 87 were treated by operation and radiation, and 102 by radiation alone. Of the patients operated upon, 31.16 per cent were well after five years, and 46.75 per cent of those treated by radiation alone were well after three years. Haupt cured 61 per cent of all patients by operation and Heyman 42 per cent by radiation alone. The general consensus of opinion is that operable cases give best end-results following operation, where about 50 per cent can be expected to obtain five-year cures. Lately it has been advocated that all such cases be radiated first as a precautionary measure, and some six to twelve weeks later these patients be subjected to panhysterectomy.

In 520 cases of cancer of the fundus, Offert[33] found that 11.9 per cent had cancer of the ovary, and in 616 cases of cancer of the ovary, 8.6 per cent had cancer of the fundus. Therefore in all operations for cancer of the ovary the entire uterus should be removed, and it goes without saying that with cancer of the fundus both ovaries should be removed. Here again lack of time forbids any detailed discussion of radium treatment or operative technic.

Palliative Measures

In hopeless cases palliative measures are to be directed towards relieving pain by means of radiation, opiates, cordotomy, presacral sympathectomy, and spinal injections of alcohol; relieving ureteral obstruction by catheterization and dilatation, or transplantation of the ureter into the bowel; intestinal obstruction by colostomy; and hygienic measures and transfusions for general physical improvment and mental support.

Prophylaxis

After all this has been said, we come to the question of prevention versus cure, or prophylaxis. It is quite apparent from the mentioned figures that carcinoma of the cervix is vastly more common in multiparous women, though carcinoma of the fundus is about equally common in nullipara. So far

as the cervix is concerned, the only difference is in the greatly increased frequency in multipara of traumatic birth injury, and the subsequent long continued chronic infection, inflammation and irritation, even up to ten to fifteen years. Cervices not lacerated or infected rarely, if ever, develop cancer.

We must use the term pre-cancerous with caution, and show that lesions so termed are frequently actually followed by cancer. Although infection of the cervix may not in itself be a pre-cancerous lesion, it certainly furnishes the necessary stimulus to subsequent cancer development. The following table will show that when old birth injuries are appropriately treated by cauterization, trachelorrhaphy or cervical amputation, cancer is a very rare subsequent development. Bland[4] gives a frequency of 1 in 1,000; here it is only 1 in 1,800.

Bossi[6]	7,000	Low Amp. D. & C.	0
Hunner[24]	2,895	Amp. or cautery	0
Pemberton and Smith[34]	3,814	Trachelorrhaphy	5
	740	Amputation	0
	1,406	Cautery	0
Saltstein and Topick[38]	18,500	Appropriate	15
Bartlett and Smith[2]	1,700	Cautery	0

McFadden and Salstein have collected 2,514 cases of carcinoma of the cervix, in which only thirty-four, or one in seventy-five, had had any previous cervical attention.

What means should be used to return the cervix to as normal a condition as possible will depend upon the lesion present. Beall[3] prefers cautery to trachelorrhaphy, Bursey[10] and Proctor[37] prefer the cautery for eversions and erosions and surgery for the gross lesions. Very extensive lesions are difficult to heal by cautery, trachelorrhaphy often does not completely remove all the diseased tissue, and amputation is contra-indicated in young women who desire more children, on account of the increased probability of later sterility, abortion and dystocia. Each case must be judged individually, and clinical experience will indicate the most appropriate treatment. The very important fact is, as emphasized by Crossen,[11] Hinselman,[19] Phaneuf,[35] Schmidt,[41] Bailey,[1] Schiller,[39] and a host of others, that all chronic irritative lesions of the cervix be prevented or at least eliminated at the earliest possible moment.

The knowledge that many cervical cancers are preventable is a challenge to the medical profession. This constitutes a most profitable field for preventive medicine. Martin[30] states that a large majority of uterine cancers could be cured by known means which we have at our disposal, if these cases were only seen early enough.

Bloodgood[5] has long urged that a great many women can be saved by the correction of lesions which are frequently followed by malignancy, and by timely operations for early malignancy when the lesions are amenable to treatment.

Since really early cancer of the uterus produces no symptoms and may easily be overlooked clinically, we must urge that all women over thirty years of age, and especially multiparas, seek at least semi-annual physical examinations. At such examinations the patient's general physical condition, condition of heart, lungs, kidneys, breast and bowel should be determined, and especial attention be given her pelvic organs by such means as we have already suggested. We may not find a surprising number of early symptomless carcinomas, but we will be able to effect a cure in many cases of such lesions as are frequently followed sooner or later by cancer, and we will also discover most cancers at a far earlier stage than we usually see them today.

There is a great reluctancy of people to face bravely radical procedures for the relief of painless and relatively symptomless conditions. At least half of all persons who die of cancer do so without the possible curative benefit of operation. We should emphasize the fact to patients that today radical surgery for the cure of cancer is not often fatal, whereas untreated cancer always ends in death within a relatively short time. There are other factors, not the fault of the patient, which sometimes contribute to this fatal procrastination. Hamant and Koenig[17] have summarized the situation as follows:

Cause of Delay in Diagnosis

Patient

1. Ignorance of symptoms; believes natural or menopause.
2. Takes advice of friends, midwives and quacks.
3. Pharmacists prescribe.
4. Fears the truth.
5. Economic—loss of time and expense of treatment.

Physician

1. Fails to examine patient.
2. Fails through lack of training or carelessness to recognize early cancer.
3. Inappropriate treatment.

To Improve Present Results

Patient

1. Education of public through schools, colleges, newspapers, movies and radio about early symptoms and prophylaxis.
2. Assure cancer is curable only if treated early.
3. Periodic health examination, especially pelvic examinations.

Physician

1. Educational, instruction pre- and post-graduate on methods of early diagnosis, biopsy.
2. Prophylactic care of all cervical lesions.
3. Better obstetrical care.
4. Establishment of cancer clinics at many places available to all, manned by experts in cancer diagnosis and therapy and with every available means of treatment at their disposal.

We do not intend nor do we fear by this educational publicity to produce a cancer phobia and scare people to death, but in the words of Whitehouse, we hope, if necessary, to frighten them into a longer life.

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TUBERCULOSIS IN THE ADOLESCENT

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The adolescent age is a crucial period in pulmonary tuberculosis, both in prevention and treatment. Adult type tuberculosis begins to appear more frequently at this time. A higher percentage of minimal tuberculosis, too, is discovered at this age period, resulting in earlier treatment and hence more cures. As infection is spread chiefly by the open adult type patient, beneficial preventive results will follow increased health activities among the adolescent.

The Case-Finding Unit of the Detroit Tuberculosis Sanatorium in coöperation with the Wayne County Medical Society, the Detroit Board of Education and the Detroit Department of Health, limited its school work the past year chiefly to the 11th and 12th grades of the high schools in metropolitan Detroit. In all 8,015 students were tuberculin tested (von Pirquet) and 1,861 positive reactors x-rayed.

The procedure adopted was the same in all schools. First, a short illustrated talk was given to the teachers on the value of tuberculosis case-finding in the apparently healthy students. The teachers in turn were asked to explain the importance of the test to the pupils, issuing to them a printed explanatory permit slip for the parent's signature. Only students with signed permit slips were tested. Signed tuberculin per-

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TABLE I. RESULTS OF TUBERCULIN TEST

School	Per Cent of Enrollment Tested	Number Enrolled	Number Tested	Per Cent Positive	Number Positive	Number Negative	Number Absent
1	94.22	571	538	38.5	197	314	27
2	82.03	462	379	23.3	85	279	15
3	70.75	1,193	844	30.3	255	585	4
4	68.32	1,468	1,003	31.5	304	659	40
5	65.98	967	638	14	87	533	18
6	64.78	619	401	48.8	191	202	8
7	55.90	1,152	644	28.6	182	454	8
8	52.88	450	238	32.7	75	154	9
9	52.29	1,048	548	24.9	113	340	95
10	47.37	418	198	37.5	68	116	14
Total East Schools	65.05	8,348	5,431	30	1,557	3,636	238
11	55.04	1,170	644	30.6	187	424	33
12	52.28	1,800	941	18.9	160	685	96
13	44.25	409	181	28.7	48	119	14
14	43.95	1,861	818	25.8	189	541	88
Total West Schools	49.31	5,240	2,584	24.8	584	1,769	231

TABLE II. RESULTS OF TUBERCULIN TESTS—AGE, SEX AND COLOR
GENERAL AVERAGE 30.2 PER CENT POSITIVE

White					Colored				
Age	Sex	Positive	Negative	Per Cent Positive	Age	Sex	Positive	Negative	Per Cent Positive
14	M	52	130	28.5	14	M	9	6	60.0
	F	66	226	22.6		F	12	31	27.9
15	M	139	344	28.7	15	M	36	25	59.0
	F	195	620	23.9		F	37	59	38.5
16	M	248	716	25.7	16	M	44	43	50.5
	F	299	1,085	21.6		F	55	90	37.9
17	M	260	591	30.5	17	M	30	31	49.1
	F	261	720	26.6		F	41	52	44.0
18	M	129	243	34.6	18	M	28	27	50.9
	F	99	192	30.5		F	12	15	44.4
19	M	35	50	41.1	19	M	12	9	57.1
	F	10	23	30.3		F	4	1	80.0
Totals	M	863	2,074	29.3	Totals	M	159	141	53.0
	F	930	2,866	24.4		F	161	248	39.3

TABLE III. X-RAY RESULTS

School	No. Completing Examination	Adult Type No.	Adult Type Per Cent	Childhood No.	Childhood Per Cent	Observation	Suspect Childhood	Pleurisy	Negative	Not X-Rayed
1	508	6	1.18	46	9.0	0	7	3	446	3
2	356	1	0.28	14	3.9	2	2	0	337	8
3	838	6	0.71	63	7.5	2	7	4	756	2
4	878	6	0.68	42	4.7	2	12	2	814	85
5	607	1	0.16	14	2.3	1	4	2	585	13
6	368	3	0.81	31	8.4	3	6	1	324	25
7	602	3	0.47	37	6.1	1	8	0	553	34
8	219	0	0.00	14	6.3	2	2	1	200	10
9	438	3	0.67	22	5.0	1	4	0	408	15
10	176	1	0.56	12	6.8	0	1	0	162	8
11	582	2	0.34	30	5.1	2	4	0	544	29
12	826	1	0.12	18	2.1	2	4	0	801	19
13	161	1	0.62	9	5.6	1	0	0	150	6
14	707	0	0.00	30	4.2	4	2	0	671	23
Total	7,266	34	0.46	382	5.26	23	63	13	6,751	280

mits were obtained from 65 per cent of the 13,588 enrollment.

There are twenty-five academic high and vocational schools in the community (including City X, within Detroit proper, represented by schools 1 and 3), fourteen of which were studied. Of these fourteen schools (Table I), the first ten are on the East side and the remaining four on the West side (East and West of Woodward Avenue). The percentage of tests given varied from 43.9 per cent to 94.2 per cent in individual schools, with an average of 58.9 per cent. The lower percentage actually tested resulted from absentees through inclement weather, illness, et cetera. The 8,015 students tested, divided into 5,431 on the East side and 2,584 on the West side, gave respectively 30 per cent and 24.8 per cent of positive reactors. The school variation in the incidence of positive reactors interestingly coincides with the social-economic conditions in the areas drained. It is also apparent that a high rate exists in the schools of the predominately Polish and colored sections.

Dividing the results according to age, sex and color, ages 14 to 19, are itemized in Table II. In the whites there were 29.3 per cent positive among the males and 27.8 per cent in the females, while the colored gave 53 per cent positive in the males and 39.3 per cent in the females.

Those having a positive tuberculin reaction were x-rayed, the results of which are shown in Table III. Outstanding is the discovery of 34 students with adult type disease, or 0.46 per cent of the total (7,266) completing the examination. There are also 382 childhood type cases or 5.26 per cent of the total. Twenty-five of the adult type students were hospitalized. Among the childhood type one student with soft glands at the left root developed tuberculous meningitis and died.

Adult type tuberculosis was found in 0.44 per cent of the white total and 0.84 per cent of the colored total. Schools 1 and 3, where the enrollment is 75 per cent Polish, showed 0.89 per cent of adult type disease. It is apparent therefore that in this series the adult type disease rate follows the trend of positive tuberculin reactors, the percentages in the colored and Polish being higher than the general average.

Analyzing the adult type findings according to distribution in the community, thirty cases or 0.6 per cent were found among the 4,955 East side students. Of the 2,276 students studied on the West side, on the other hand, only four or 0.17 per cent had adult type disease. Very apparent too, is the greater frequency of the disease among the females, in both white and colored—Table IV.

The finding of adult type tuberculosis in the apparently healthy adolescent is not a matter of chance. This is shown rather conclusively in Table V, giving the findings in Schools 1 and 7, which were tested annually for the last four years.

The last monthly report of the Depart-

TABLE IV. ADULT TYPE DISEASE—AGE, SEX AND COLOR

White				Colored			
Age	Number Tested		Adult Type	Age	Number Tested		Adult Type
14 years	M	182	1	14 years	M	15	0
	F	292	1		F	43	0
15 years	M	483	1	15 years	M	61	0
	F	815	7		F	96	0
16 years	M	964	3	16 years	M	87	1
	F	1,384	4		F	145	1
17 years	M	851	2	17 years	M	61	0
	F	981	5		F	93	4
18 years	M	372	2	18 years	M	55	0
	F	291	1		F	27	0
19 years	M	85	1	19 years	M	21	0
	F	33	0		F	5	0
Totals	M	2,937	10 – .31%	Totals	M	300	1 – .33%
	F	3,796	18 – .47%		F	409	5 – 1.22%

ment of Health (May, 1935) shows that 122 patients in the city were diagnosed as adult type tuberculosis. Of these, eighty-four or 69 per cent were favorable for treatment and the remainder twenty-six or 31 per cent had an unfavorable prognosis. In our thirty-four cases, all or 100 per cent were classified as favorable for treatment.

The degrees of involvement of the adult type disease are minimal, moderately advanced and far-advanced. Comparing the school case-finding results with those discovered by the usual means, the much greater proportion of early cases is immediately discernible, Table VI.

Analyzing our thirty-four adult type cases with reference to degree of involvement and color, we find in the whites that twenty-three or 82.1 per cent were minimal, and five or 17.9 per cent were moderately advanced, none far advanced. In the six colored five or 83.3 per cent were minimal and but one or 16.6 per cent was moderately advanced, none far advanced. Though in indecisively small numbers, these figures tend to show the same degree of involvement for both white and colored in the adolescent age.

In the latest classified figures from the Department of Health, 147 patients (Table VI), the results in the colored, even more than in the white, show the diagnosis made at a later stage in the disease. In the whites the diagnosis is moderately advanced or far-advanced in 78.4 per cent of the patients, minimal in 21.6 per cent, while in the colored the figures are 90.4 per cent and 9.6 per cent respectively. The late diagnosis in the colored probably has some influence in their high mortality. Possibly this may be due to their economic position to a degree, although ample opportunities exist in Detroit for an early diagnosis.

The matter of contact history in the adult type disease is worthy of consideration. In the thirty-four cases found, a positive contact history was given in only five or 14.7 per cent. A low percentage has also consistently been found in our previous case-finding work and is significant when compared to the 32 per cent of positive contact

TABLE V. ADULT TYPE—SCHOOLS 1 AND 7—FOUR YEARS

School 1:	1931–32	1932–33	1933–34	1934–35	Total
Number of adult type	4	3	0	6	13
Per cent of adult type	0.63	1.17	0	1.18	.70
Number tested	626	255	452	508	1,841
Average percentage for four years: White 0.68% (12 in 1,732). Colored 0.91% (1 in 109).					
School 7:					
Number of adult type	14	2	2	3	21
Per cent of adult type	0.96	0.48	1.08	0.49	.79
Number tested	1,456	411	184	602	2,653
Average percentage for four years: White 0.74% (16 in 2,138). Colored 0.97% (5 in 515).					

TABLE VI. ADULT TYPE CLASSIFICATION (A) CASE-FINDING UNIT, (B) OTHER MEANS—DEPARTMENT OF HEALTH REPORT

A		Minimal	Moderately Advanced	Advanced
Ages 14-19 years	White (28)	82.1% (23)	17.9% (5)	0
	Colored (6)	83.3% (5)	16.7% (1)	0
	Total (34)	82.4% (28)	17.6% (6)	0
B				
Ages 16 and over	White (116)	21.6% (25)	34.5% (40)	43.9% (51)
	Colored (31)	9.6% (3)	45.2% (14)	45.2% (14)
	Total (147)	19.1% (28)	36.7% (54)	44.2% (65)

history in adult patients (sixteen years and up) and 41 per cent in children, diagnosed by the usual means. One is inclined to feel that daily contact with large numbers of other students, teachers and workers may have some influence on this situation—that is, the contact source in students may be other than the usual family or household contact.

The analysis of the fourteen cases in school 7 in 1931-32 pointed very definitely to a girl with an active moderately advanced tuberculosis spreading the disease to five of her classmates. This girl had no symptoms and was active in the basket ball and hockey teams at the time of diagnosis. Incidentally, her own source of contact was discovered a year later when she learned that a man who had boarded in her home for two months died from tuberculosis.

Detroit and Wayne County has a tuberculosis service second to none. All residents can be immediately hospitalized without exception. All contacts have a diagnostic service open to them, including tuberculin test and x-ray. The social services through public and private welfare agencies give aid whenever needed. In spite of the equal services rendered to all residents, it is apparent that tuberculosis is not evenly distributed through the community. One must deduct, therefore, that factors are involved which may have definite effect on the tuberculosis situation.

It has generally been recognized that tuberculosis is chiefly a social-economic disease. One is not surprised therefore to find more tuberculosis on the East side of the city compared with the West side. (It appears that in most large cities of the world the East section has a large so-called poor area.) However, the disease is not proportionally distributed according to the eco-

nomic status alone of the areas in which the schools are located.

In our work two factors stand out—firstly, the rate of the disease in the colored and secondly the rate among the Polish, compared to the general average. The Department of Health deserves credit for its immediate hospitalization plan, which previously was the greatest obstacle to efficient handling of the problem. From the preventive and treatment point of view, the colored population is certainly to be congratulated on its coöperation. When the diagnosis of tuberculosis is made, they almost invariably accept the medical advice for hospitalization and hence immediate up-to-date treatment. In spite of this fact, however, and though the rate is decreasing, nevertheless it still remains high. One comes to the conclusion that the high rate is due at least in part to overcrowding, which is aided by the recognized low constitutional immunity of the race. There is also the probability of overwhelming doses of infection.

The Federal local slum clearance plan includes an area populated by colored people and, if properly managed, will eventually show an immense improvement on the tuberculosis rate, by removing the over-crowding. It is hoped that the Health Department will have an active part in the administration of the rehousing areas, as is the case in some European countries, so that hygienic and sanitary conditions will remain at the best. In some cities abroad a yearly lease is not renewable without the approval of the Health Department.

In the Polish population, it is recognizable that a large proportion have a marked dislike to hospitalization and it appears particularly so when the disease is tuberculosis. There are apparently both social and psychological factors involved, the correction of which is quite a problem. A comprehensive broad educational program is now being initiated and will be continuously pushed for several years. Coöperation in this movement has been promised by practically all groups in the area.

Summary

Tuberculosis sometimes has an acute onset but much more often the onset is very insidious, the disease becoming moderately advanced before the patient is aware of being ill.

Adult type tuberculosis begins to appear more frequently in the adolescent age. It is found more often in females than in males.

Overcrowding makes it easier for an active tuberculosis patient to spread the disease and probably in overwhelming doses.

A great part of tuberculosis spreading takes place within the family or household.

Tuberculosis is, however, also spread by long continued or frequent contact outside of the household and especially where there is overcrowding.

Tuberculosis may be spread in places of employment, education or recreation if necessary precautions are not carried out.

An x-ray of the lungs should be taken, with or without a preceding tuberculin test in the adolescent age and upwards, irrespective of the presence or absence of symptoms or abnormal physical signs.

A definite negative diagnosis of tuberculosis should not be made without a negative tuberculin test or x-ray.

In 1927 it cost the family and community $10,000 to raise an average child to the age of eighteen. His value, in return, at that age has been worked out by Dublin to be $29,000 and at the age of twenty-five his maximum value to be $32,000. It is apparent then how large a financial saving—if one may for the moment talk in terms of dollars—a cure of adolescents would mean.

In tuberculosis the x-ray is even more indispensable than sputum examination and is necessary both in diagnosis and treatment.

Collapse therapy is more likely to be successful in unilateral lesions and when the duration of the disease is short. Early diagnosis is essential to successful medical and surgical treatment.

Recommendations

High school and college students should be required to go through tuberculin test x-ray screening before being accepted for school teams.

Teachers and other school workers should be required to have an x-ray with or without a preceding tuberculin test.

Modern case-finding methods should be required in all places where people gather regularly, whether for work, play or food.

Rehousing is strongly recommended in every so-called slum area. This is especially true in certain colored districts.

More education is advisable among some Polish groups along the lines of inducing them to take advantage of hospitalization.

Boarders or lodgers should not be accepted, particularly in homes where there are children, without first having an x-ray of the chest.

Physicians may well carry out this case-finding program among the general population, especially from the adolescent age upwards. This applies particularly to the poor sections of large cities where there is usually overcrowding. Here one might anticipate finding tuberculosis in approximately 1 per cent of the adults.

ACUTE CATARACTS

Presumably Due to Dinitrophenol Therapy

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The reports of the harmful by-effects of various "fat-reducing" remedies containing dinitrophenol should prompt the doctor to seriously condemn their prescription and their dispensing by pharmacies. Dinitrophenol and its derivatives have been declared non-acceptable[1] by the Council on Pharmacy and Chemistry of the American Medical Association.

After several years of controlled therapy by Tainter and his co-workers, the administration of this drug has been generally discouraged because of the frequency of undesirable and toxic symptoms reported. The most common of these is a maculo-papular eruption of the skin occurring in over 7 per cent of Tainter's cases.[4] Swelling of mucous membranes, disturbances in the sense of smell and taste, and more recently the rapid formation of cataracts have been reported in many young women taking "therapeutic doses" of the drug.

Loss of vision is a weighty price to pay in order to obtain a more slender figure. The following case history is briefly related to make us more alert to a new and serious manifestation which may follow the prolonged use of dinitrophenol.

A married woman of thirty-eight years gained weight very rapidly eight years ago following an operation producing surgical menopause. She weighed 204 pounds in the summer of 1934, when she began to take from three to five capsules of dinitrophenol daily. Over a period of seven months, approximately 870 capsules were taken, reducing her weight to 168 pounds. No more tablets were taken after the Christmas holidays, whereupon her weight promptly rose to 195, where it presently stands.

About March 1, 1935, the patient first began to complain of nervousness, insomnia and dimness of vision. The loss of vision occurred in both eyes nearly simultaneously, and on June 19, 1935, there remained no practical vision other than light perception in both eyes. The cataracts appeared intumescent and crowded the iris forward.

The urinalysis was negative; the Kahn test findings negative. Blood pressure was 124/74. Her temperature was 99, pulse 66.

If the formation of acute cataracts may be assumed to be due to dinitrophenol, we have as yet no more certain explanation for their occurrence than to say they are of toxic origin. However, the studies of MacBryde and Taussig[3] reveal that the drug causes clinical variations in the functions of the liver, resulting in definite increases in the elevation of the blood sugar curve in three-fourths of all cases. This hyperglycemia is comparable to diabetes, wherein the frequent incidence of cataract is well known. Fuchs[2] thought the lenticular changes were due to abstraction of water from the lens by the action of sugar-charged eye liquids.

To conclude with the words of MacBryde and Taussig, "The fact that the majority of our patients showed somewhat alarming functional changes emphasizes the question whether the use of a drug with so great potential dangers is justified in the treatment of a relatively benign condition such as obesity."

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BITTERLING PREGNANCY TEST

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A recent article by Kanter, Bauer and Klawans[1] proposed the use of standardized bitterlings as test animals for the laboratory diagnosis of pregnancy. By standardized, they meant fish which had been found to give correct reactions with urines from both pregnant and non-pregnant individuals.

Because our experience with these fish is so markedly at variance with the results reported, we feel justified in reporting our relatively small series of cases.

Our fish were obtained from the New York Aquarium and labeled as, Rhodeus-Amarus. This is not the same zoölogical genus as used by Kanter but apparently another branch of the bitterling family. Anatomically, both fish appear to be identical, both having the same characteristic ovipositor. Our technic followed identically that of the original investigators. For the purposes of ease of recording, we called positive reactions in which the ovipositor became more than double the length of the ventral fin as ++++; lengthening reaching beyond the fin as +++; up to the end of the fin as ++; between the end and the middle of the fin as +, and any noticeable lengthening less than half the length of the fin as ±.

The fish were first tested with urines from known pregnant women, which gave a positive Friedman test, and about 10 per cent of the fish were discarded because they did not react. After the return of the ovipositor to normal size, the remaining fish were tested with urine specimens obtained from women who were not pregnant. For the purposes of standardization, we were at that time running groups of six fish, one to a bowl, with each specimen of urine. To our great surprise we found the first six fish all gave positive results with a urine which we obtained about twelve hours after the cessation of menstruation. Erratic results of a similar character were obtained with urines obtained from other non-pregnant women. We gave up any hope of standardizing these fish against negative urines, as with the negative specimens we used the majority of the fish gave false positive results. In a review of the results obtained, there seemed to be some correlation between false positivity and the menstrual period. We, therefore, in an attempt to demonstrate the validity of this belief, have obtained from each of seven adult females three specimens of urine spaced as follows: (1) From two to seven days premenstrual; (2) twelve to twenty-four hours postmenstrual; (3) as near the midpoint of the interval as possible.

Table I summarizes our results.

We have in addition tested sixteen fish with five specimens of urine obtained from males. One of these specimens, which contained 0.2 per cent of glucose, gave ++ reactions with three of the four fish used. Another specimen gave a + positive with one of two fish used; the third gave a ++ positive with one fish out of two, and the other two specimens gave no reaction with four and two fish respectively.

In our small series of reactions obtained with urines from known non-pregnant women, there seems to be some correlation between this reaction and the menstrual period. All of the marked reactions in this series occurred with specimens obtained either pre- or post-menstrual. Interval specimens rarely caused any reaction. While our series is so small that chance may have caused this grouping, this still may be a suggestion as to the cause of the reaction.

The recent paper by Kleiner, Weisman and Barowsky[2] suggests that our grouping is a chance one, as they obtained false positive results with urines from four out of seven normal menstruating women and one out of four males. Post-menopausal specimens gave positive reactions with one of three specimens. They also report that two of their fifty fish gave positive results from simple handling of the fish without exposure to urine.

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TABLE I. BITTERLING TEST WITH URINE FROM NORMAL MENSTRUATING WOMEN, SHOWING STRENGTH OF REACTION, TIME AND INTERVAL AT WHICH REACTIONS WERE OBTAINED

	Premenstrual Specimens	Menstrual Period	Postmenstrual Specimens	Interval Specimens
A.	± 3 days 3-30-35	4-1 to 4-5	+++ 3 days ++++ 4 days 4-6-35	0 4-18-35
B.	0 4-18-35	4-18 to 4-22	0 4-22-35	Not obtained
C.	0 3-30-35	3-31 to 4-5	0 3 days +++ 4 days 4-6-35	+ 3 days 4-18-35
D.	++ 3 days 3-19-35	3-19 to 3-24	0 3-25-35	± 3 days 4-9-35
E.	++ 3 days ++ 4 days 4-6-35	4-11 to 4-16	0 4-18-35	0 4-28-35
F.	++ 3 days 3-18-35	3-31 to 4-5	+ 3 days 4-13-35	Not obtained
G.	++++ 2 days 3-8-35	3-9 to 3-12	++ 3 days 3-13-35	0 3-27-35

Summary

1. We are unable to confirm the results reported by Kanter, Bauer and Klawans.

2. Strongly positive results were obtained with seven out of twenty fish tested with specimens from non-pregnant women.

3. These false positives occurred chiefly in pre- and post-menstrual specimens. Interval specimens were usually negative.

4. False positive results were obtained with five out of sixteen fish tested with male urines.

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RECURRENT VOMITING*

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Recurrent vomiting, cyclic vomiting, periodic vomiting, acetonemic vomiting or recurrent vomiting with acetonemia is undoubtedly not a single disease. Like the old terms rheumatism, biliousness or nervousness, it probably includes several separate diseases. Until we know more about the pathology and the underlying metabolic disturbance it should be kept as a clinical entity. Recurrent vomiting or recurrent vomiting with acetonemia is a better term than cyclic or periodic vomiting. There is no regularity in the recurrence of attacks.

Recurrent vomiting is a clinical picture seen usually in delicate, neurotic children, characterized by repeated attacks of uncontrollable vomiting, marked prostration and dehydration and increased acetone bodies in the blood and urine. The attacks usually occur after fatigue or excitement, with some acute infection or following an anesthetic. The onset is usually between the ages of 2 and 5, and the attacks cease at or before puberty. The vomiting usually begins suddenly but it may be preceded by loss of appetite, coated tongue and languor. There

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is often a moderate fever. The child looks very ill, the eyes are sunken. the face anxious. There is marked constipation and the urine is scanty and high colored. Most of these signs are the direct results of the vomiting and the dehydration. On the fourth or fifth day the child rather suddenly brightens up and asks for food, and in two days seems as well as ever. After a variable period another attack comes on.

True recurrent vomiting is seldom fatal. The fatal cases can be (1) unrecognized organic disease in the abdomen, (2) superimposed infection, or (3) dehydration, toxemia and circulatory failure. One hears more about high mortality rates in Europe and in South America than in the United States. This can be explained in two ways: (1) Many of the fatal cases are appendiceal abscess or intestinal obstruction with severe vomiting and acetonemia. (2) The practical treatment of ordinary patients is much better in this country and we are awake to the dangers of dehydration.

Pathology.—What happens in the body of one of these frail neurotic children following a party, a Christmas celebration, a circus, a long automobile trip or a hard afternoon's play? As yet we do not know, although there are several theories. Most of these children recover, so very little has been found at autopsy. The most characteristic finding has been fatty degeneration of the liver, which is probably the result rather than the cause. Various other abdominal conditions have been found such as appendicitis, congenital atresia, and duodenal kinks. A few cases have stopped having attacks after removal of the appendix or the relief of a partial obstruction. Recurrent attacks of appendicitis or recurrent obstruction may simulate recurrent vomiting but should be ruled out from this syndrome as separate diseases. Focal infection like chronic tonsillitis or pyelitis could so disturb body chemistry or sympathetic innervation or nutrition that it could cause attacks in a susceptible individual. It is certainly not the only cause.

It is quite possible that in some cases, but not always, an attack of recurrent vomiting is an allergic manifestation. Further study will be necessary to clarify this point.

The rôle of the internal secretions in relation to this syndrome is not yet understood. An attempt has been made to explain the picture as a hyper-insulinism or a hyper-adrenalinism. While the internal secretions must take an active part in the abnormal metabolism of the attack, it is most likely secondary and not primary.

For a considerable time we thought that the acidosis was the result of the vomiting, and called it the acidosis of vomiting. Then someone discovered acetone in the urine before the vomiting started, and we looked upon it as the vomiting of acidosis. We can now safely say that the vomiting is not the primary cause of the acetonemia and that the acetonemia is not the cause of the vomiting. These two prominent signs are both the result of some common cause. One can have a marked acetonemia without vomiting and severe vomiting often exists without marked acetonemia.

Fortunately we are getting away from the term acidosis in this connection. One can even have an inorganic alkalosis with an excess of acetone bodies and the term acidosis would be misleading. Ketogenesis is just as apt to occur in alkalosis as in acidosis. The increased formation of acetone bodies in recurrent vomiting is only partially and indirectly due to the vomiting and the starvation. In some cases it precedes the vomiting, and in quite a number it persists for days after the vomiting has stopped. There are many theories as to the cause of this increase in ketone bodies in the blood and urine. (1) A rapid fall in blood sugar is quite the rule in recurrent vomiting. Theoretically when the blood sugar gets too low, there is a mechanism which makes sugar out of fats and proteins, and by-products of this process are the ketones and amino acids. The same thing happens to a lesser degree in pneumonia and other fevers, and after severe exercise. (2) Retention. The oliguria limits the excretion of the acetone bodies. The loss of chlorides by the excessive vomiting favors the retention of organic acids in combination with bases in the blood and tissues. (3) One can conceive of a central nervous system acetonuria. There are certain nuclei in the brain which have a definite positive effect on carbohydrate metabolism, liver function, and the secretions of the pancreas and adrenals. These centers can be irritated by bacterial, chemical or metabolic poisons or by abnormal mental stimuli. It has been proven that emotional influences can in-

crease the rate of oxidation of carbohydrates. (4) Several authors have attempted to explain the acetonemia on the basis of disordered liver function, with abnormal liberation of partially oxidized products of fat and protein metabolism. At present we can say that there is an over-production, and a retention of ketone bodies, but that the metabolic mechanism of this over-production is not yet fully understood.

The hypoglycemia which occurs in most of these cases has been explained in various ways: hyper-insulinism, increased secretion of adrenalin, increased activity of the vegetative or parasympathetic nervous system, a labile, unstable sugar regulating mechanism on a constitutional basis, increased oxidation of glycogen and deficient supply of stored glycogen in the liver. Numerous experiments have been conducted by Salmonsen of Oslo and others on the effect of sudden withdrawal of carbohydrates and feeding of high fat diets to normal children and to interval cases of recurrent vomiting. The results have not been very conclusive. They seemed to show that, in the interval between attacks, children with this disease responded much like normal children, and showed no abnormal sensitiveness of their metabolism to withdrawal of sugar or to a high fat diet. Both normals and recurrent vomiters showed a fall in blood sugar, and ketonuria and some vomiting, but after 2 to 5 days the vomiting stops, the ketonuria improves and the blood sugar rises. This seems to be added proof that sugars can be made from fats when necessary. Even in artificial fever from Sulfosin, interval cases showed no different metabolic reaction than normal. In all these experiments constitutionally frail children, whether they had cyclic vomiting or not, gave greater metabolic reactions to withdrawal of carbohydrates and addition of fats than strong, sturdy children. Salmonsen concludes that there is no evidence of pathological metabolism between attacks. Our former theory that children with recurrent vomiting have a peculiar metabolism which is especially susceptible to fever, to reduction of carbohydrate, or to addition of fat seems to have been weakened by the work of Salmonsen. As yet we have discovered no single characteristic metabolic peculiarity like one sees in diabetes, Addison's disease, hypothyroidism or hyperthyroidism or Froelich's syndrome.

Recently more stress seems to be placed on the initiation of these attacks by the influence of the central nervous system, acting through the vegetative or parasympathetic nerves. These constitutionally neuropathic children have certain centers in the brain which are easily stimulated by fatigue, excitement, fever, and by metabolic or other poisons. The resulting nervous response acting through the parasympathetic system causes vomiting and a severe metabolic disturbance, characterized by lowered blood sugar, marked ketogenesis, and a state of dehydration which makes the clinical picture. It occurs only in children because of the instability of the infantile metabolism, especially the mechanisms for maintaining equilibrium in all our body constants. Children are more water labile, more thermolabile, more sugar labile, etc.

From the standpoint of a practicing pediatrician, who is unable to indulge in metabolic studies, I have evolved a crude conception of the nature of one of these attacks. We see many evidences of protective reaction in childhood. For example, a child is sensitive to egg albumen. When a mother first feeds him egg, he reacts with a typical urticarial attack and warns the mother that he should not have it. Later on he reacts to repeated small doses with eczema. Still later he does not like eggs and takes them only when they are foolishly forced upon him. In a further protective way, by getting small amounts of egg in various hidden sources he gradually desensitizes himself and eventually loses his allergy to eggs. A second rather reverse example. We feed infants high carbohydrate diets. We put sugar in the milk and feed a lot of cereal, graham crackers, banana, etc. After the age of one year, mothers, for some unknown reason, decide that sugar is not good for children. The rapidly growing child needs a lot of carbohydrate so he develops a craze for sweets and begs for candy, ice cream and cookies. If he doesn't get them at home, he begs them from the neighbors or steals them. In a community way this need for sugar is looked after. On a long auto ride candy bars are sold at all the wayside stands, popcorn, peanuts and candy at the circus, and ice cream and cake are served at fatiguing children's parties. The refusal of food when a child is coming down with some acute infection, vomiting when certain harmful substances are taken

into the stomach, singing Sweet Adeline or Hail! Hail! the gang's all here! when there is too much alcohol in the system, to produce prolonged expiration, and breathe out the alcohol, are further examples of protective responses.

One can conceive of a highstrung nervous child who, as a result of psychic or physical strain, has an abnormal flow of impulses to the vomiting center and the sympathetic system. The resulting vomiting and metabolic derangement produces a toxemia, with low blood sugar and acetonemia. The only way to bring back his sympathetic balance and the equilibrium of his body constants is complete abstinence from food, and complete physical and mental relaxation. The therapeutic starvation is accomplished by the vomiting when anything is taken into the stomach. The vomiting and abstinence from food cause a lowering of the blood sugar and the initiation of the regulatory mechanism by which fats and proteins are made into sugar with the ketone bodies as byproducts. These ketone bodies furnish the sedative which produces physical and mental relaxation. The loss of chloride ions by the vomiting leaves fixed bases available to take up any dangerous excess of acetone, diacetic and other organic acids. Even the dehydration is to a certain degree protective as the oliguria inhibits too rapid excretion of these bodies by the kidneys. The constipation prevents loss of fixed bases which are valuable in neutralizing the organic acids. Our ketogenic diet and dehydration for the treatment of epileptic seizures is only a poor imitation of this natural therapeutic process.

Our former picture of the vicious circle established in this disease was all wrong. We thought the vomiting and the dehydration caused the acetonemia and the acetonemia increased the vomiting and the dehydration. If such were true, all cases of recurrent vomiting would die on the third or fourth day. In spite of much misdirected treatment, they nearly all recover on the third or fourth or fifth day. All the steps in the metabolism of this readjustment are not yet understood. I know, however, of nothing which directly contradicts the assumption that an attack of recurrent vomiting is a protective metabolic response on the part of a susceptible individual to an intolerable nervous and metabolic situation. The vomiting center is stimulated through the afferent sympathetic or parasympathetic nerve fibers, which carry the impulse from sensory nerve terminals. This stimulation may result from (1) emotional overflow from excitement, anger, anxiety, et cetera, (2) fatigue, (3) toxic products of infection, (4) reflexly from appendicitis, obstruction or other abdominal disease, (5) chemical poisons like chloroform or apomorphin, (6) metabolic poisons as in liver disease, (7) allergy. Individuals may be more susceptible by (1) inheritance and constitution, (2) malnutrition, (3) ptosis, (4) focal infection, (5) previous disease, especially influenza and encephalitis, (6) any disease or condition which produces malnutrition, lowered general health, or irritability of the central nervous system. Usually the metabolic changes are secondary and not primary. It is an attack of severe vomiting with a sudden hypoglycemia and a whole train of complicated, essentially protective metabolic reactions, that are pathological only in the sense that they are exaggerations of the normal physiological responses and are not delicately and skilfully controlled, due to the immaturity of the infantile mechanisms. The attacks stop at puberty because the mechanisms for maintaining body constants become better regulated and more perfect at that time.

The Prevention of Attacks.—One should always make a thorough study of any child who has repeated severe attacks of vomiting. Appendicitis must be ruled out. A gastro-intestinal x-ray study should be made to discover possible kinks, bands of adhesions, congenital stenoses or other intra-abdominal peculiarities. Foci of infection should be looked for and appropriately treated. Tonsils and adenoids, sinus infection and pyelocystitis are the most common. Probably the eradication of foci of infection acts chiefly to improve the nutrition and make the child more sturdy both physically and mentally.

Most of these frail children have a poor posture and a marked visceroptosis. Proper support of the abdominal wall, improving the posture and the general nutrition by rest and diet, including plenty of fats and sugars, help to lessen the frequency of the attacks.

The foolish reduction of sugars in the diet of growing children keeps some of them frail and neurotic. The wild theory of cer-

tain dentists that eating sugars causes dental decay has harmed both the children and their teeth. You may remember 15 years ago that Kerley advocated marked restriction in both fats and sugars between attacks and the giving of soda to keep the acidosis away. In the light of our present knowledge this treatment is wrong. You cannot build a supporting cushion of fat in the mesentery and the omentum by taking away fats and sugars. It seems pretty well established that recurrent vomiting is not due to abnormal fat metabolism between attacks. Children need sugar and are less apt to have an attack if the supply of this quickly available food is kept up at all times and especially when subjected to fatigue or excitement or infection. A factor which is often overlooked is the mental and emotional environment in the home or school. Anything we can do to favor a restful, happy, harmonious atmosphere for these children will help to prevent attacks. Our oft repeated fresh air, sunshine, rest, avoidance of fatigue, adequate balanced diet, exercise and postural education are as important here as elsewhere in making the child physically, emotionally and metabolically stable.

The Treatment of the Attack.—The first indication, especially early in the attack, is to lessen the irritability of the central nervous system. This can be done by bromide and chloral, Luminal or other sedative by rectum, or sodium amytal, sodium luminal, codein or morphin subcutaneously. The dehydration must be minimized by giving fluids by the most practical route. It makes very little difference which fluid is used—normal saline, Ringer's solution or Hartman's physiological buffer solution. The hypoglycemia must be treated with glucose in some form. Unless the patient is in a hospital where it can be determined whether an inorganic acidosis or an alkalosis is present, I do not believe that soda should be used. I cannot see the logic in giving insulin to a child who already has a marked hypoglycemia. Adrenalin is of no use unless as a circulatory stimulant. If sufficient fluids are given, the acetonemia will take care of itself.

Medical Arts Bldg.

OUTBREAK OF TYPHOID FEVER DUE TO CARRIER

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Raw milk is frequently a serious source of infection in typhoid fever outbreaks, as the typhoid fever bacillus grows readily in this medium. The milk usually becomes contaminated at its point of origin on the farm, the source of contamination usually being a convalescing case of typhoid, a mild missed case or a typhoid carrier.

Typhoid carriers furnish the most difficult source of infection to find and to handle after discovery.

Their discovery is rendered difficult by the fact that they might be floating farm hands who move from farm to farm and whose addresses cannot be found after the outbreak of typhoid, or if they are permanent residents of the farm it is hard to convince these persons that they could be carriers of the typhoid germ at intermittent periods and are, therefore, always a menace to the general public due to carelessness and a lack of knowledge of personal hygiene.

Two per cent of all persons who have had typhoid fever are stated to continue to discharge typhoid organisms in their stool or urine after recovery for varying periods of time and sometimes even for life.

In a four year study of typhoid fever in Washington, D. C., it was found that 10 per cent of all cases were apparently milk-borne.

Milk-borne epidemics have the following characteristics:

1. They curve abruptly, rise to a peak and subside sharply like water-borne epi-

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demics, but they occur at any time of the year.

2. The cases occur on the track of a milk supply and are mostly confined to that area.
3. The cases are found among those who are large consumers of milk.
4. More than one case is apt to occur at the same time in one family.
5. The disease shows a shorter incubation period, probably due to the great amount of infection taken.

Unpasteurized milk is the most prolific source of infection in these outbreaks, but cream, ice cream, butter, buttermilk and fresh cheese may contain typhoid bacilli and thus occasionally become a means of transmitting the infection.

From the above facts it can readily be seen that typhoid fever carriers who are not aware of their condition or who are negligent in their personal hygiene, or who have a combination of these two factors, are a serious menace to a raw milk supply.

Due to lack of cleanliness, milk pails, the milk itself and even the water supply are apt to be contaminated at some time or other.

Typhoid fever has been a rare disease in the territory supervised by the author of this monograph. In fact, according to the records of the Health Department, no cases have been reported in this section for the past five years, and only forty-five cases for the whole county. The forty-five cases were spread as follows: 1930—nine cases; 1931—nine cases; 1932—five cases; 1933—five cases; 1934—seventeen cases. This being an average of nine cases per year.

In the latter part of May, 1935, the 29th to be exact, it was reported to us that a case of typhoid had been admited to a hospital at the county seat with a clinical diagnosis of typhoid fever.

As is the rule of the department, an immediate investigation was launched as to the possible source of infection. From this lead we have brought to light eight cases of typhoid, and have traced the source of infection to a typhoid carrier who sold raw milk to the families with the cases of typhoid, as well as using it in his own household.

Reports of the first cases were slow in being reported to the Health Department due to the fact that the physicians in charge stated they did not know where to report the cases and in some instances had some difficulty in recognizing the disease.

The history of the outbreak is as follows:

A farmer whom I shall call "A" bought a cow in 1933 and sold milk to a man living in a neighboring county as well as to transients; in 1934 he duplicated this performance, but in 1935 he enlarged his clientele to four families.

"A" started selling milk about the middle of April, 1935, and the first case was reported early in May. From then on, the other cases made their appearance.

Among the cases and one of the first, was the son of this farmer "A," who had been out of work since January and had stayed home to help on the farm.

All of the patients gave a history of drinking raw milk from the farm of "A." Vegetables, fruits, et cetera, which were obtained from widely different sources could not be linked up as a causative factor in these cases.

On investigation "A" gave a history of typhoid fever in 1926; since then, according to his own statement, he has been in perfect health.

No other cases of typhoid at any other period can be traced to this man.

Laboratory examinations of specimens of feces from this man were positive for Bacillus typhosus, and the Widal test gave positive findings in a dilution of 1-640.

All of the eight cases gave positive laboratory findings for typhoid fever. One person has died, the wife of carrier "A," who contracted the disease while nursing her son, one of the first cases.

Another carrier was discovered in this small group of cases, who shall be designated as "B." This man had what he thought was typhoid fever in 1912. Specimens of stool from him were positive for Bacillus typhosus.

The wife of "B," although giving no history of any symptoms of typhoid fever, was found positive for Bacillus typhosus when her urine was examined. It is an academic question here as to whether she became a carrier of Bacillus typhosus from contact with her husband prior to this outbreak, or whether she developed the carrier condition tion since drinking the raw contaminated milk. It is obviously impossible to decide this interesting point at the present time. Due to this history we hesitate to call her

a permanent carrier until a further lapse of time.

As far as can be discovered, "B" has never been a source of contagion. This is probably due to his occupation as salesman in a feed store where the possibilities of pollution of foodstuff are negligible.

Both these carriers have been informed of their condition and urged to take the necessary steps to clear it up. Both have signed typhoid fever carrier agreements with the State Department of Health, which prohibits them from handling milk or milk products and vegetables and fruit for public consumption until such time as their condition is declared harmless to the general public.

The epidemiological history of this outbreak is a convincing argument in favor of the use of pasteurized milk or the boiling of milk where a pasteurized milk supply cannot be obtained.

This is a classical exposition of a typhoid fever outbreak due to the combination of two factors, a raw milk supply and a carrier who was unaware of his condition.

The outbreak was fortunately confined to a small group of persons, eight in number, due to the very limited quantity of milk handled by the carrier.

THE PROPER TREATMENT OF CONCOMITANT CONVERGENT STRABISMUS

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So disfiguring a defect as squint did not escape the attention of the very earliest of medical writers. It was considered in ancient times a permanent defect, an affliction or punishment sent by a displeased deity. Hippocrates observed the comitant variety of squint and considered that it was due to epilepsy, or that it was an hereditary taint, noticing that a parent with a crossed eye often had a cross-eyed child. Paré attributed squint to the defective position of the child in the cradle. From 1727 to 1737 appeared John Taylor of England, one of the first to resort to operative measures for squint, who traveled throughout the continent demonstrating his operative procedure for its cure. His operation, which consisted mainly of cutting the belly of the rectus internus muscle, and the complete detachment of the muscle and capsule, was attended by such glaring deformities, consisting of external deviation, sunken caruncle and exophthalmos, that this operation for squint was soon discarded. It was not until 1903 when Claude Worth brought forth his fusion theory of strabismus that we really began to understand the problem.

From this date until the present time, there have been devised many different kinds of operations for straightening crossed eyes. But in all of these was the element of inexactness in the pre-operative measurements of the squint and want of proper gauging of the operation, and hence the results have been exceedingly poor. So we come now to our present understanding of squint, which has been entirely revised in the last ten years, whereby the squint is accurately measured before the operation. The operation becomes, therefore, an exact procedure, not a hit and miss affair.

Concomitant convergent strabismus or squint (these terms are interchangeable) is characterized by the power of the crossed eye to follow the movements of the other eye in all directions, and the angle of squint always remaining the same size. Concomitant strabismus thus refers to the type of squint in which the amount of deviation remains the same, whereas non-concomitant strabismus refers to the type where the deviation changes considerably as the eyes are carried in different directions.

Concomitant convergent strabismus may be caused by many factors. There are four prevailing theories, which I will merely mention.

1. The muscular theory—which attributes the defect to an over-acting muscle.

2. The accommodation theory of Donders—which claims that squint is due to a

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disturbance of convergence and accommodation.

3. The nervous theory.

4. The fusion theory of Worth—which is the most widely accepted theory. I shall elaborate somewhat on this one. In the human being, there are two retinæ so placed as to have corresponding parts. The right or nasal half of the right retina corresponds with the right or temporal half of the left retina, and vice versa. Fusion demands such adjustment of the macula that the image of an object seen will fall on the macula of each eye. These images in turn are sent to the cortical center of vision in the brain and stimulate the same set of cells, and the two images on the two retinæ make but one cortical stimulus, and one impression, and only one object is seen. The uniting of the two retinal images into one mental image is called fusion. Thus the lack of fusion sense causes squint. Although the location of a fusion center is not definitely established, a defective fusion may be caused by a lack of connection between the vestibular centers and the descending central visual radiating fibers.

What happens to a cross-eyed child whose defect is not properly treated? He develops an acquired amblyopia, or loss of the sight of the crossed eye, due to disuse—a condition known as amblyopia exanopsia. How does this come about? There are two areas of the fundus which need to be considered: the macula or point of clearest vision, and the eccentric or peripheral vision. The image on the macula of the crossed eye is not the same as that on the macula of the fixing eye, and this might give rise to some conflict between the two maculæ, producing confusion and diplopia. However, voluntary suppression of the image on the macula of the squinting eye readily occurs. Diplopia is abolished by the suppression of the peripheral image in the squinting eye. This development of amblyopia occurs during the early period of childhood. At the age of six or seven years, the neglected child has lost most of the function of the crossed eye, and the most we can hope for at this stage is a cosmetic result. Doctor Wilkinson of Washington states that most of the patients who appear to recover from crossed eyes as they grow older have done so at the expense of the loss of that eye, for they seldom, if ever, have vision in the previously deviated eye. A blind eye has a marked tendency to deviate outward—which fact can explain many of the so-called cures.

The differential diagnosis of comitant strabismus, which is a functional disturbance, from a paralytic squint, which is a pathological condition due to a lesion of the nerve supplying the affected muscle, is readily made.

It should be understood that squint is curable in its incipiency, though it is difficult and often impossible to cure neglected cases. These neglected cases cannot be cured by a simple operation, and the mere fact that we get a cosmetic result does not mean a cure at all, but simply the relief of a deformity with the loss of a functioning eye. There is a great deal of new interest in the subject of orthoptic training for strabismus, the end-results of which will be closely watched.

The optical correction is our primary aim in the treatment of every case of strabismus. The treatment of squint is divided into the non-operative and the operative. The non-operative or medical treatment of squint consists of:

1. Prescribing the proper glasses, and full correction given the squinting eye. The degree of strabismus is measured both for far and for near, and the measurements are repeated several times.

2. Atropinization. Its main use is to produce an increase in monocular visual acuity, and also binocular vision. The patient is advised to use drops of one per cent atropine in the fixing eye three times daily for three days, and to repeat in three weeks. Guibor states that best results are secured when the visual acuity of the fixing eye is made equal to or somewhat less than that of the squinting eye, by atropinization.

3. Orthoptic training. This is accomplished by use of the stereoscope and charts with which one may train fusion and increase fusion amplitude. In a recent work by Guibor of Chicago, he lays great stress on orthoptic training and feels that he gets good results after a period of daily training varying from five months to one year. Orthoptic training is indeed essential both before and after operations.

When is the proper time to operate? After the patient has been using glasses, atropine and orthoptic training for six months to one year, and it can readily be

seen that there is little or no lessening of the degree of squint, an operation is indicated. Operation should be advised as early as possible, and, following squint surgery, orthoptic exercises again begun.

The mere operation does not cure strabismus, but is a necessary step in the treatment, the aim of which is to re-establish the harmonious working of the movements of both eyes, as required for perfect binocular vision.

By far the greatest advance in eye muscle surgery has been the introduction of the recession operation by Doctor P. C. Jameson, of New York, under whom I had the good fortune to work for several years. With the advent of accurate operative procedure, the operations of tenotomies and partial tenotomies, all of which left much to be guessed, as to what the ultimate effect might be, are gradually being discarded. Jameson's recession operation is based on the principle of scleral suturing, the ability of attaching the muscle to the sclera, which is made of yellow elastic and white fibrous tissue, and so is readily able to anchor the muscle and to hold it wherever it is attached. In recession operations, Jameson gives the following rule: *For every five degrees of required correction, the muscle should be moved back from its insertion one millimeter.*

The operative procedures in use today at the leading eye clinics are those of recession and advancement. The recession type of operation relaxes the muscle by direct relaxation of the deviating muscle, whereas, an advancement increases the tension of the opposing and also of the operated eye muscle. The recession type of operation requires a special technic, but is not difficult to master. In brief, the muscle is detached from its insertion and reattached to the sclera by scleral suturing at the exact place indicated by your previous measurements.

When should a recession operation be performed? When the rectus internus or muscle involved is over-developed, hypertensive, and hyperactive. There are four tests to determine when to do a recession operation:

1. Obtain the near point of convergence. (Instruct the patient to concentrate both eyes on a white headed pin and gradually approach the eyes with the pin, and the near point of convergence is at the point where one eye goes outward.) A near point of convergence of fifty millimeters or less means a hypertensive muscle, whereas a remote near point of convergence of seventy or more millimeters means a relaxed muscle.

2. Obtain the prism diopter of deviation —Duane screen test. If deviation is greater for near point than for distance, a hypertensive muscle is indicated.

3. Excursion tests. If the eye does not falter in the cardinal directions of gaze and goes under the semilunar fold, that is, vigorous muscular excursions, it further indicates a hypertensive muscle.

4. At operation, examine the muscle and the muscle capsule to determine whether it appears to be over-developed and over-active.

When should an advancement operation be performed? The type of advancement operation to which I am referring combines the advancement and the resection operations. In brief, the insertion of the muscle is advanced toward the cornea and at the same time a section of it excised, the amount excised depending on previous measurements. An advancement operation accomplishes its effect by increasing the tension on both sides, that is, increases the tension on the internus and the externus. An advancement operation should be done if the muscle is not of the hypertensive type, if the near point of convergence is remote, and if the excursion tests are feeble.

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AN AEROPLANE VIEW OF MEDICAL PRACTICE IN EUROPE

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DETROIT, MICHIGAN

There is a feeling with many persons that in order to speak authoritatively, one must spend months or years in a country about which he assays to write. There may be a great deal of truth in this. However, there is a certain value in first impressions, since often first impressions are only deepened and verified by more prolonged acquaintance with the situation. I offer this for what it is worth with the statement that I vouch for the substantial accuracy of the interviews recorded.

Firmly believing in the sales slogan, "Ask the man who owns one," we determined some months ago to visit England, Belgium, Germany, Switzerland and France and there ask the men who "owned" State Medicine and Voluntary Insurance Medicine, how they liked their article. Having watched with interest the activity of State and County Medical Societies in the past few years regarding medical economics and realizing that the medical profession must assume the main responsibility in all matters pertaining to people's health, we insist that this obligation must be recognized by organized medicine and the practicing physician at this time. This most important principle, *i. e.*, that the profession must make itself responsible for the quality of medical care which people receive at its hand, forces us to realize also that the organization of the medical profession under lay administration has a social outlook, and a lack of the professional outlook which results only in confusion, inferior professional service, and interference with medical progress.

Types of People Interviewed

Feeling that statements from organization leaders might be colored and therefore not represent the attitude of its constituents, we interviewed people who were integral parts of socialized medicine or of the panel system, and they understood our questions and spoke freely of their experiences. In England we conversed freely with the conductor, and the guard on the train, the laborers about the depot, the hotel porter, the clerk at the drug store, the clerk in the dry goods store, and taxi drivers. We approached these people and explained to them why we inquired about their medical care. We obtained the following information very readily: All felt that their panel system was very satisfactory.

They knew of no other form of medical care for they had grown into it. The conductor and guard especially elaborated at length as to their panel doctor. Both stated they had one of the finest panel doctors in England. Their doctor had 2,000 patients and consulted his patients in the morning, seeing thirty of them in thirty minutes. On closer inquiry we found that very little examination of the patient took place, if any, and no laboratory tests at all were done. In every case the patient entered the office with his own diagnosis and received the medicine that he himself prescribed or that was suggested from his description of his symptoms. At Saint Thomas Hospital two resident surgeons were interviewed. They felt that the panel system was very vicious. It did not give them any incentive to progress. They choose to enter the army or navy for their final and life work after finishing their hospital training. An admitting clerk in the London City Hospital spoke freely of the panel system, but said that he thought it favored "chiseling" to a very great extent. The Chief of the Out-Patient Department of a London hospital spoke freely of the panel system and told us of how his out-patient department had increased greatly in numbers in the last few years; also of the improvement in the type of medical service rendered to these panel and the indigent patients. But he felt the system was not the proper one as it now existed, because the attending men in the out-patient department, who had a private practice outside, were not paid, but gave freely of their time three days a week to care for indigent people. These attend-

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ing men also acted as consultants to the panel doctor without charge or financial remuneration and also had to spend their own money to have the consulting reports typed and mailed to the panel doctors. All private cases of attending men were cared for in private hospitals called Nursing Homes. Reputation was all that the attending men might hope to obtain from the service rendered the indigent and panel patient.

An Assistant Dean of a College of Medicine felt that the social agencies were forcing the medical practice to increase the wage limit for the panel patient from $1,200 a year to include all wage earners without limit. An attending surgeon spoke of the panel system as being quite adequate at this time for the young men starting in practice, but the old men did not like it. From his conversation we gathered that a great deal of surgery was done on the outside by panel doctors who were not equipped to do the same and only the very serious and incurable cases were turned to the attending surgeons of these hospitals. We then consulted a doctor who was pointed out to us as having one of the largest panels in London, and after waiting in his reception room, which, by the way, was poorly kept, poorly furnished, and filled with ten panel patients (these panel patients were seen in about fifteen minutes' time; very little or no examination was given to them), we then approached the doctor, explained to him who we were and asked him if he would answer a few personal questions for us. This he did in the following manner: He had been in practice ten years. His practice consisted of 2,000 panel patients. He was paid about $1.66 a year for each patient. He also had some insurance patients. His total income was $5,000 a year gross. He was compelled to answer house calls at any time, day or night. He did all the work he could in his office and in the patient's home because he did not want to lose any of his panel cases. He was proud of the fact that he had a large panel and was satisfied with it. He showed us a great number of cards and papers that he was forced to fill out in each case so that he might collect his fees. He finished his interview by saying that a panel doctor acted as a clearing house for a patient who wanted papers signed and medicine and could not obtain the same without a doctor's prescription. He was unable to do any private work whatever, but was happy with his circumstances. He employed an assistant to help him whose salary was paid from the gross income. He rarely hospitalized pneumonia cases.

The Care of Indigents

It is traditional in the medical profession that the doctor will care for medical needs of indigent patients without charge. In the past, when the organization of society was much simpler than at present, it was not difficult for the physician to determine who was entitled to his free services, and it was understood by the society that the doctor was taking such a risk with no expectation of remuneration. Today, however, so many other factors have entered into medical care that the simple relationships of the past are obscured. The doctor still gives his services to the poor, but he rarely receives credit for it either in the minds of the patients or the community at large. Most patients do not want it known that they are indigent and the community likewise shields this fact. It has been my experience that the patients who are cared for at public expense in our city hospitals or county institutions quite commonly believe that the institutions of the city pay the doctor for their medical care and for this reason they demand services and obtain them. Because of this misunderstanding by the patient and all concerned it is still the universal practice for physicians to perform service without pay for indigent patients. From this practice it has developed that physicians are not expected to make any charges to patients in city or municipal hospitals, even though such patients are capable of paying their hospital charges and doctor bills. This is especially true in all insurance case patients whether automobile insurance or compensation insurance. The hospital collects their bill from the insurance company but the doctors are not paid. The medical care is never paid for in city or municipality hospitals. The gift of these services on the part of these physicians is so taken for granted that they are now expected to furnish medical care without charge to free and ward patients in hospitals and municipal institutions, and also give the time and cost of transportation to and from such in-

stitutions wherever in the community they may be located. In England a very small sum is allowed the attending men annually for teaching internes and $50 is allowed to them yearly for transportation cost to and from the hospital. All hospitals, as they call them in England, are supported by good will donations and each indigent patient is forced to give to the hospital in proportion to his earnings. The deficit is made up by good will offerings.

Comments on the English System

In spite of the fact that the English system has made a separation in administration of cash and medical benefit, there is still cause of much friction between the insurance societies and the medical profession because a physician must certify to the disability for cash benefit. This results in an elaborate system of checking up on a physician's diagnosis and treatment of a patient. It is an established fact that the incidence of sickness per capita is greater than before insurance and panel became effective. This point was readily stated by people in a position to know, namely doctors and out-patient heads. The average hospital days for operation are greatly lengthened in England, namely instead of from seven to ten day period hospitalization for an appendectomy, the hospitalization is usually fourteen to twenty-one days.

Belgium

In Brussels we visited the clinic of Dr. Mayer, who received us graciously, showing us about his clinic and talking freely of the medical practice in Belgium. There is a voluntary form of insurance existing in Belgium, but it is not very popular. The indigent is cared for in the same manner as we here in Michigan care for our indigent. The one fact that impressed us most in the care of the low wage earner was that surgical fees were reduced to about one-third of what is usually paid to us here. The lay opinion of the American Express men, hotel men and taxi drivers verified the opinion of Dr. Mayer that every one was well satisfied with the present health service. When they were sick they called their own family doctor and paid him for his services, which of course was about one-half of what our average bill would cost.

Switzerland

Our investigations in Switzerland among medical men and lay people in similar walks of life gave us the same information that we obtained in Belgium. There were no compulsory medical laws, no health insurance plan, but a voluntary health insurance and a working men's compensation law. Indigent cases were cared for as before stated by City and State. A rigid investigation precedes a declaration of indigency for the patient. According to the night clerk in the hotel if he were taken sick he would call his family doctor and when he had no funds he would then be turned over to the city or county hospital for care. If he were hurt while at work, the insurance company would pay his doctor to care for him. A doctor whom we found in his office verified this statement and said that there was also a voluntary health insurance system that was not very popular.

Germany

In Germany, we visited Cologne, Mainz and Heidelberg. American Express men, hotel men, boat employees, store clerks and milk men were interviewed. From these lay people we were told of a voluntary insurance plan, but none of them left the impression with us that any health insurance was compulsory. Their health plan gave them the privilege of selecting any doctor they wish. The rate of insurance is 1 per cent of the weekly income deducted by the employer and forwarded to the State. The doctor in his turn is paid by the State a very definite fixed fee. All lay people are very well satisfied with this condition. The doctors interviewed were the English speaking doctors in Heidelberg. They spoke of dissatisfaction among practicing physicians because of their low income in proportion to their total investment. They felt this panel system also removed all incentive to progress. As a matter of fact, these men in hospitals felt their only chance of progression was to remain as an understudy to the professors and some day supplant them. This opinion that hospital trained men had no desire to do private practicing was borne by one and all. It is difficult to state what the monthly income of the practitioner in Germany is, but we were assured by them that it was extremely low. In several places throughout Ger-

many different arrangements were made to pay the physician; some were full time physicians; some on a fee basis, and others per capita. The cost of medical care, we are told, has increased four times its figure of twenty years ago. There is no doubt that the principal cause of the disproportionate increase in expense over income is due to the phenomenon that always accompanies sickness insurance, namely the per capita days of sickness has tripled in this time.

France

France did not pass a compulsory insurance law until 1928 and it was not effective until 1930. The terms of the law provide that the physician shall deal with a patient in much the same manner as in private practice. The fee to be paid is arrived at by mutual understanding between the patient and the doctor. There is an official fee schedule used as a basis for reimbursement. The physician makes his charges on a basis of a simple medical act and all of their medical work is a multiple of this. When the patient presents the doctor's certificate to the insurance company he receives a fixed percentage of the scheduled fee for reimbursement. The patient pays the doctor his fee at the time the service is rendered and collects from the company to reimburse himself to whatever extent that he can. The French plan includes all paid workers from sixteen to sixty years of age who earn up to 300 francs or $20.00 a week, the employer and the employee contribute to this plan. A married man carries his insurance for himself and his family. If he is the only one working in the family he will receive compensation to pay for the sickness of himself, his children or his wife. If the wife and husband should both work the children will be insured under the husband's policy and the wife's insurance will cover herself only.

The information obtained concerning this health insurance was from the sisters of charity, nurses, doctors and internes of the American Hospital in Paris, clerks in stores, hotel employees and taxi men. The lay people, as a whole, are in favor of this system; the doctors favor this system also, for the care of the low wage earner admits considerable chiseling and considerable difficulty in filling health certificates. The indigent people are cared for in municipal hospitals in much the same manner as we care for our indigents here. All doctors give their time without financial remuneration. Private patients in Paris pay considerably more for their hospital care and doctor's fee than the average are charged here in Michigan. For example, a three bed ward in the American Hospital of Paris for an obstetrical case for fourteen days would amount in dollars to $140 for hospital care and the doctor's fees are approximately the same as the hospital bill.

Conclusions and Recommendations

1. The medical practice in the panel system as practiced in England, Germany and France does not measure up to the medical standards we, of the medical profession, have established here in the United States for the care of the low wage earner.
2. Belgium and Switzerland have much the same systems as we have and all are contented. The social worker, though, is trying to socialize medicine. The low wage earner and indigent are well cared for.
3. Our indigent people are best cared for in the United States as at the present time, namely, in municipal and county hospitals, serviced by internes and residents on all full time, the attending men to act as teachers and instructors on part time at a nominal fee to be paid by County or State or City. Transportation charges to and from the hospital should be borne by City or County and not by the doctor.
4. All City and County Physicians should be appointed for a two year period after a competitive examination conducted by a board composed of the member of the faculty of both Medical Schools and County Medical Societies and should be full time physicians. The supervisor shall be a medical man capable of consultation and teaching these doctors. This two year appointment should be staggered.
5. The low wage earner is best cared for by us under the Pino plan providing the hospital bill is on a flat rate schedule as for State cases, and doctors' fees is the balance of a total bill for major work not to exceed $120. This bill should be distributed over a period of a year and payable in bi-monthly or monthly installments in five or ten dollar payments. All other surgical and medical acts should be considered as a multiple of this standard. All wage earners whose yearly income does not exceed $1,200 a year should come under this plan.

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EDITORIAL

SOCIALIZED MEDICINE

Articles continue to appear in both lay and medical magazines advocating socialized medicine, but we are still unconvinced. Two papers written by physicians have appeared recently, one in the *New York Medical Journal* and one in a lay monthly, *Common Sense*. The burden of the argument is that there are many thousands of physicians receiving incomes inadequate to meet the costs of living and many hundreds are on the welfare. The adoption of socialized or state medicine would insure all physicians a better or at least a livable income. One maintains that the County Medical Society as a unit could control the situation. We are told that state medicine is not "coming"—it is already here. The writer refers to the care of the insane, of communicable diseases, the indigent *et hoc genus omne*. Yet, whenever we have so-called state or socialized medicine, the physician has lost control. One thing is certain, should what is now individual practice of medicine and surgery ever be taken over by the state or political body, the members of the profession will lose their autonomy. Dr. Hugh Cabot, in a book, The Doctor's Bill, has made the following statement which one may ponder with profit:

"It should be remembered, however, that the decision as to what pattern medical practice will gradually assume will not be made, in the long run, solely upon the opinion of the profession. In this field physicians have no exclusive rights to the expression of authoritative opinion. The problems are economic and social, rather than technical and professional. In the long run, the decision must remain with public opinion, since, after all, it is the public and not the profession, which is most vitally concerned. I cannot subscribe to the view that any group in the community has any rights which the public is bound to respect, if they can be shown to be opposed to the public interest."

The socialization of medicine means sacrifice of medical autonomy. It also means regulation and regimentation to a large extent by non-medical groups. Those who advocate state medicine point to the success of state owned schools. Every sensible person will admit that certain functions are best performed by the state, among them, education, police and fire protection, the postal service and certain other public or semi-public utilities. This should, however, bring very little solace to those members of the medical profession who advocate state medicine with the feeling that every physician would be assured an adequate income. Every teacher is not assured an adequate income; in fact, thousands of them haven't a fighting chance for any position or any income. They simply have to seek some other calling. We have said it many times: organize medicine and much fewer physicians can do the work that is to be done. Organization, needless to say, produces efficiency and efficiency eliminates man power. There is no proof whatsoever that the socialization of medicine will insure every member of the medical profession remunerative employment.

One writer points the finger to England. But what a price in taxation! The major item in the tax dollar of one city in this state (Detroit) is for education, 25.4 cents; add the maintenance of all hospitals in the city and adequate incomes for all the physicians, nurses, and pharmacists, and the

amount would cause the overburdened taxpayer to protest more vigorously than ever.

The considerate person will hold neither to uncompromising individualism nor to socialism or state control. The old Greek motto "nothing in excess" is perhaps the wisest after all. There are certain functions which are best performed by the state and others, including the practice of medicine, we believe, are best performed by individuals.

MEDICO-LEGAL DEPARTMENT

It is of the utmost importance that persons engaged in any occupation inform themselves as to their legal status in their occupation, which includes their rights, their duties and their liabilities under the law. This JOURNAL from time to time has stressed the importance of accurate records, of x-ray examinations, of the physician's duty in his practice, as well as his rights and liabilities. A new creature is added to the JOURNAL through the courtesy of Dr. W. J. Stapleton and Mr. Barbour's office in the way of a Medico-Legal department. The August number of this JOURNAL contained a paper by Dr. Stapleton which recommended a number of readable works on medical jurisprudence. The physician will do well to equip himself with one or more of these up-to-date books. The present number of the JOURNAL contains an article by Mr. Clayton Purdy giving the Statute of Limitations as applied to physicians and surgeons, particularly in Michigan, with comment thereon. Needless to say, this is an important subject in the matter of the legal relations of physician and patient.

This new department will not be a question-and-answer department, but it is believed that careful study of the papers presented from time to time will clarify many problems that may arise in the minds of our members.

POOR FISH!

The early diagnosis of pregnancy has been a concern of the medical profession and a matter of interest to the laity for centuries. Perhaps the most reliable diagnostic test is the Aschheim-Zondek, which has become widely known. Made under proper conditions by competent laboratory workers, the margin of error has been found to be very small.

Within the past few months, another method has been devised, known as the bitterling test. The bitterling is a European cyprinoid fish (rhodeus amarus) common in the waters about New York City. The carp and the goldfish are said to be the best known of the species.

The bitterling test for pregnancy as outlined by Kanter and co-workers consists in the exposure of a suitable "standardized" female fish of the bitterling family to 4 c.c. of the urine to be tested, in a quart of water. This exposure covers a period of three days. Kanter states that most fish responded within 24 hours, if the urine was from a case of pregnancy. In such a positive response to the presence of "pregnancy hormones" the ovipositor of the fish, the female generative organ, lengthens from a normal length of 2-3 mm. to 20-30 mm. extending well beyond the ventral fin. No such change is presumed to take place with urine obtained from males or from non-pregnant females. Kanter, however, calls attention to the necessity of standardizing the fish. He states that many of the fish are refractory to the "pregnancy" hormones and therefore would, if used, give false negative results. His article is not so definite in its statements regarding possible false positive reactions test probably is not one for the anterior pituitary like hormone used in the original Aschheim-Zondek test or the Friedman modification. He suggests that the test depends on the presence of an excessive amount of estrogenic substance in urines from pregnant women.

In this number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY appears a contribution on the subject by Doctors Owen and Cope of the Detroit Clinical laboratory in which the findings, with them, have proved unreliable as a means of determining pregnancy.

WHAT PRICE "SLENDERING"

Vanity causes some people to take desperate chances in their endeavor to possess a sylph-like figure. Women appear to be the worst sufferers. A fat man may be somewhat cumbersome to himself. The Falstaffs, however, appear to be more acceptable than those of "the lean lank Cassius" type.

To be fat or not to be, that is the ques-

tion. If slendering might be accomplished by swallowing a pill, many would embrace the method. When it entails a great deal of self-denial, such as limiting the food intake or a choice of food low in calories, it is a wholly different matter. Adiposity goes hand in hand with inactivity. Increase in weight results as a rule in limitation of movement and limitation of movement is followed by an increase in weight, a sort of a vicious circle.

Recently, somewhat alarming reports have been made of the alleged toxic effects of dinitrophenol. In this number of this JOURNAL appears a paper by Dr. B. F. Glowacki of Detroit on acute cataracts which appear to be associated with dinitrophenol therapy. Several cases of cataract have been reported in the *Journal of the American Medical Association,* which have developed in persons who have taken the drug over a long period of time. Commenting on the coincidence of the use of the preparation and the incidence of cataract, the *Journal of the American Medical Association* goes on to say:

"The coincidence is of interest regardless of whether or not it may be established that the disturbance arose because of the dinitrophenol or because of some other undetected cause. It should, of course, be borne in mind that dinitrophenol has not been standardized chemically. The possible occurrence of toxic contaminants in preparations of dinitrophenol must be considered. The possibility also exists that the cataracts may have resulted from associated malnutrition and an unbalanced diet, which are in many instances a part of the program of those who attempt rapid reduction of weight by the use of dinitrophenol or other methods."

The matter of weight reduction is best undertaken under the supervision of a physician or internist who will undertake to study the basic requirements of the body in regard to both food and exercise.

At the 1935 session of the legislature of the state of Maine, a law was passed exempting radium used in the treatment of disease from taxation. This is as it should be except that the law does not extend far enough. All physicians' office equipment should be exempt from taxation. Every doctor saves the state enough in the charity work he performs to more than compensate for the personal tax charged yearly on his office equipment.

MEDICO - LEGAL DEPARTMENT

THE STATUTE OF LIMITATIONS AS APPLIED TO PHYSICIANS AND SURGEONS

By Mr. Clayton Purdy, Detroit

Each State in the Union has a statute which is commonly known as the Statute of Limitations, by which the legislatures of the various states fix a period in which a party must bring an action to have any standing in the courts. We will consider particularly the statute of limitations as it applies to physicians and surgeons for malpractice in the State of Michigan, although in parts of the discussion we may take up other types for illustrations. Section No. 13976 of the 1929 Compiled Laws, Section 3, of the State of Michigan, has a clause which reads as follows:

"Actions against * * * or for malpractice of physicians, surgeons or dentists shall be brought within two years from the time the cause of action occurs and not afterwards."

In other causes of action, such as a case growing out of an automobile accident, the legislature has set the statute of limitations at three years. In the common ordinary open account, such as a bill which might be owing to a doctor by a patient for services, the statute of limitations is six years, etc.

The primary purpose of this law is to forestall people bringing actions long after the evidence has been forgotten, or the records which might be used in the defense of a case have been destroyed. In other words, the purpose of such laws is to prevent stale claims.

We might call attention to the fact that there are exceptions to the two year bar in actions against physicians and surgeons above referred to; the first being the case of a doctor treating a minor and the second arising when a cause of action has been concealed by the doctor from the plaintiff.

(1) A doctor in treating a minor, that is a party under the age of 21 years, is not protected by the two year statute of limitations. The courts of Michigan have held that the statute does not begin to run as against a minor until he has reached the age of twenty-one years. Therefore, if a doctor treated a child at the age of five years that child, in theory, might bring suit for malpractice against the doctor because of that treatment at any time within the next eighteen years. To show that such an action can come about we might cite a case which was brought to our attention here in Detroit not

more than two years ago. A physician who had practised medicine some twenty or twenty-five years ago in a small town in Upper Michigan had, in the course of his practice, delivered a baby girl. Twenty-two years after that time the doctor (who was then living in Detroit) was threatened with a malpractice action because of alleged negligence in the use of instruments in the delivery of the baby, claiming an injury to the eye. A suit was never instituted, however, and now that more than twenty-three years have elapsed since the act complained of, the case is barred by the statute of limitations above referred to.

(2) Section No. 13983 of the 1929 Compiled Laws of the State of Michigan reads as follows:

"If any person who is liable to any of the actions mentioned in this chapter shall fraudulently conceal the cause of action from the knowledge of the person entitled thereto, the action may be commenced at any time within two years after the person who is entitled to bring the same shall discover that he had such a cause of action, although such action would be otherwise barred by the provisions of this chapter."

The above statute is the second exception to the two year bar as against a physician. It would be, of course, necessary to go into a long discussion to fully cover just what would constitute fraud, but we might say that the Courts of Michigan have held that it is necessary that there be some active fraud and if the plaintiff has sufficient knowledge to put him upon inquiry, the above law would not bar the statute of limitations from running against him.

The courts of the various states, in construing the statute of limitations, have reached different conclusions. Some courts, such as the Supreme Court of Ohio, have held that the statute of limitations begins to run immediately after the claimed negligent act is committed. To illustrate, if a physician in operating on a patient is charged with leaving a sponge in the incision the Ohio court would hold that the statute of limitations would begin to run from the day the operation was performed, as that, according to their theory, was the date the negligent act was committed.

Other courts, such as our Michigan Supreme Court, have construed the statute of limitations as not beginning to run until the discontinuance of the relationship of physician and patient.

In the case above cited, if the physician had continued to treat the patient for a period of ten months or a year after the operation, the Michigan court holds that the statute of limitations would not commence to run until the discontinuance of the treatment, and, as one can see, it would extend the time considerably in which a patient might bring suit against a doctor.

Another question which has arisen in the courts in construing the statute of limitations is as to whether an alleged negligent act of a physician, which might not cause damage immediately but would cause damage some three or four years after the happening of the alleged negligent act, would be barred by the statute of limitations if a physician had discontinued treatment more than two years prior to the time that the damage resulted. Under the decisions of our Michigan courts it would appear that they would hold that whether the damage was known or not the statute would run from the time the physician discontinued treatment. A case in Michigan which was recently disposed of contained such a question. In that case a woman had gone to a physician and surgeon who specialized in the treatment of the eye and secured, after he had given his prescription, a set of glasses which she claimed to have taken back to the physician to be checked. This lady had worn the glasses for some three years, and her eyes, according to her claim, grew steadily worse. At the end of that time she was examined by an optometrist and it was claimed that he found that one lens of the glasses had been reversed, that is the inner side was placed at the outer side of the frame. The plaintiff in that case claimed that due to that improper act she had practically lost the sight of her eye and of course she knew nothing about the alleged negligent act until some three years after she had discontinued treatment with the doctor. This case was disposed of without going to trial, by another defendant not a physician, but we feel confident that the court would have dismissed the case as against the physician because of the statute of limitations.

In conclusion we wish to call attention to the fact that it is very important that the doctor keep adequate records as to his treatment of cases. In a great many cases recently, plaintiffs, who have failed to institute suits within the two years granted them by the statute, have attempted to bring the case within the statute by claiming to have had some treatment less than two years prior to the time when they instituted suit. There are numerous cases started on such a basis and it cannot be too strongly impressed upon the doctor that if he has good records as to his treatment of the patient, and as to the time of his discontinuance of the treatment, that it carries very great weight with the courts and juries and is sometimes the means of having a case disposed of without going into its merits.

A MOMENT OF MEDICAL HISTORY

W. T. D.

BACTERIOLOGICAL AND TISSUE CULTURE METHODS

Living beings are dependent for their existence upon a set of chemical and physical factors which are adjusted to form a favorable environment. Such an environment is not only essential to the organism as a whole but to every constituent tissue and cell. The individual cells of an animal, for example, are as dependent upon the chemical and physical features of the tissue fluid environment and blood as the animal itself is upon its food, its enemies and divers other factors of its environment. Parasitic cells and organisms are similarly dependent upon the nutrient media unwittingly provided by the host. Consequently, an important aspect of biological investigation has been concerned with those environmental conditions which affect life. Through culture methods, it has been possible to create artificially an environment in which cells, tissues and even whole organs could be studied. Changes in the chemical and physical character of such an environment are not only easily effected, but it is also possible to observe the reaction of cells and tissues to these changes.

Until recently, culture methods have been adapted principally to free living and parasitic organisms of microscopic size. Leeuwenhoek, as early as 1674, had turned his microscopes to a study of minute living particles which he found in fluids. The "little animals" were first discovered in rain water taken from an exposed tub. He patiently studied the structure, movements and growth in numbers of these minute forms, which we now recognize as protozoa, algæ and bacteria. In an attempt to study the effect of the "hotness" of pepper upon the animalcules, Leeuwenhoek prepared infusions of pounded pepper only to find that his organisms thrived better in these than in their natural media. He prepared other media in which to cultivate and observe organisms. Among these were well water, sea water, melted snow, vinegar and infusions of clove, ginger, dung and gutter dirt. He further recorded an experiment in which an infusion was carried for several days in a pocket where it was subjected to a temperature near that of his own body. As early as 1693, Edmund King made the first studies on infusions of oats and cooked cabbage.

During the following hundred and fifty years, a great number of naturalists, provided with the inadequately corrected microscopes of the time, attempted to study infusoria or infusion animals. These consisted, in addition to bacteria, protozoa and algæ, of rotifers and other small multicellular forms. Among the outstanding students of this type of life were Joblot (1718), Hill (1746 and 1751), Needham (1748 and 1750), Wrisberg (1765), Spallanzani (1765), Terechowsky (1775), O. F. Müller (1786), Abildgaard (1793), Gruithuisen (1809 and 1812), Wiegmann and Stieren (1820 and 1823) and Ehrenberg (1838). These men made infusions literally by the hundreds. Infusions were made from grain, hay, straw, a number of fruits and vegetables, seeds, parts of flowers, roots, tubers and such things as plant leaves and bark. Wine and drugs were likewise used, as were blood, urine, bile and feces from various animals. Broths were made of dead flies, beef, mutton, fish and mussels, of semen, egg yolk and albumen, feathers, hair and tobacco. Even iron, marble, copper and resins were introduced. Infusions of dust, gutter dirt and slime from bogs and ponds were among the more common media for the study of microörganisms.

Students of microscopic life during the eighteenth and early nineteenth centuries were chiefly interested in the discovery, naming and classification of new forms. The great variety of infusions was made in the hope that new microörganisms might be found. After a time, it was noted that the same organisms frequently occurred in different infusions, also that organisms from widely different localities were similar in type. Consequently, during the nineteenth century, there was a tendency to use a selected number of materials in culture infusions. Simple meat broths, blood, milk, urine, hay infusions and sugary solutions sufficed for most purposes.

Many problems arose as to the significance of organisms. Were they living beings in the sense of larger animals and plants? Were they specific forms which developed from strains of similar type or did they generate spontaneously? These ques-

tions occupied the attention of scientists for many years, and it was not till the idea of spontaneous generation was proven false that culture methods particularly advanced. Through the work of Joblot, Spallanzani, Terechowsky, Schulze, Schwann, Schröder and Dusch, Pasteur, and Tyndall, spontaneous generation was proven to be a false conception based upon the contamination of culture media by dust-borne organisms.

Spallanzani demonstrated that hermetically sealed cultures remained free from organisms. Franz Schulze, in 1836, found that there was no contamination when air was introduced into a culture, if the air were previously washed of dust particles by bubbling through concentrated sulphuric acid. The next year, Theodor Schwann showed that cultures could be protected from contamination if air were introduced to the medium through glass tubing heated near the melting point. Schröder and Dusch (1854), and later Schröder alone, demonstrated that cotton wool was effective in preventing the passage of microörganisms into tubes of sterile media, but would allow air to flow freely. The technic of protecting cultures with pledgets of cotton fiber is even at present a common method of avoiding contamination. Pasteur (1861) showed that if the necks of culture flasks were drawn out and bent downward or into spirals, air could enter the flask while dust-borne organisms were excluded. Finally, Tyndall (1877) showed that there would be no contamination of a sterile culture fluid if the surrounding air were absolutely free from suspended dust particles or motes.

Taxonomic and physiological studies on microörganisms in the middle of the nineteenth century had progressed to the extent that animal and plant forms were distinguished from one another and that a group of organisms known as bacilli and vibrios were recognized as causative agents of putrefaction and various types of fermentation. The practical importance of these minute organisms, therefore, led to the development of methods with which the environmental relationships of these organisms could be studied. Pasteur (1862), Roberts (1874) and Cohn (1876) found that neutralization of the acidity of culture media allowed better growth of bacteria and greater resistance to boiling temperature. Litmus and turmeric became extensively used as indicators of the acidity or neutrality of media. Roberts also suggested adjusting the specific gravity of the media to a constant value.

During the 1860's and 1870's following the demonstration of methods of contamination, increased attention was given to methods of sterilization. Since the time of Wrisberg and Spallanzani, it was generally agreed that heat killed organisms. There was much controversy, however, on the lowest effective temperature required to kill bacteria until it was independently discovered by Tyndall and Cohn that bacteria existed in two forms: an active, vegetative form which was killed in a few minutes exposure to temperatures of 70° C. or above, and an inactive germ or spore which was thermoresistant. Cohn, working with Bacillus subtilis, and Koch, using anthrax, demonstrated in 1876 that spores gave rise to bacillary forms and these in time formed spores again. Sterilization methods were thus required to kill spores as well as active bacteria.

Tyndall (1877) introduced a method of sterilization using discontinuous heat. According to this method, which immediately became important, cultures were subjected to boiling temperatures for a few moments each day for several days; thus, as the spores germinated, each successive generation of active forms was killed. In this way, a culture was rendered absolutely sterile and ready to be inoculated with specific organisms for study.

A second method of sterilization, which was introduced by Tiegel (1871) and Eberth (1872), involved the filtration of media through porous clay. Pasteur and Joubert (1877) used plaster of Paris with asbestos intermixed as a filter and more or less standardized filtration methods until 1884, when Chamberland devised candle-shaped filter tubes of unglazed porcelain. The filters of Chamberland and others obviated heating of the media. This was likewise true of filters made from baked infusorial earth, which were introduced by Nordtmeyer (1891) and called Berkefeld filters after the owner of the mine in which the earth was found. Media which otherwise would have been changed or coagulated by heat were forced through a filter by pressure or suction.

In order to obtain sterilization tempera-

tures above 100° C. for the killing of bacterial spores, special ovens or iron boxes were constructed to be placed over gas flames. Other methods of obtaining sterilization at temperatures above boiling involved the use of baths of heated brine, oil or paraffin. For sterilization at 100° C., Koch, Gaffky and Löffler (1881) recommended a steam bath which consisted of a metal cylinder having a layer of water at the bottom. A continuous vapor of steam produced by heating kept the chamber at the required temperature. By clamping a lid to the steam chamber, the steam could not escape and, under pressure, its temperature increased. A common apparatus in the early 1880's for compressed or live steam was the Papin pot, a device which had been used for years in the cleaning of bones. Another similar apparatus was a steam pot which was provided with a valve and introduced by Fol. With the addition of a pressure manometer, a valve and a thermometer, such chambers for compressed steam sterilization came to be known as autoclaves.

If much attention was given the methods of sterilization, still more was devoted to culture media. Studies were made on the simplest nutritive requirements of bacteria by Pasteur, Cohn and Nägeli. Solutions of inorganic chemicals were found to permit bacterial growth. Dujardin (1841) was probably the first to use inorganic media. Pasteur, Rauben, Cohn and Nägeli developed artificial media which consisted of such chemicals as potassium phosphate, ammonium tartrate, magnesium sulphate, tribasic calcium phosphate, calcium chloride, sodium chloride, ammonium nitrate and ash of yeast dissolved in distilled water. Over a hundred such liquid media varying in the type and proportion of chemicals are in present day use.

The essentials of a liquid medium were a satisfactory source of carbon and nitrogen plus certain inorganic ions and suitable tonicity. Commonly, certain organic materials, such as carbohydrates, glycerol and alcohols, were used in liquid cultures for specific purposes. The meat broths of earlier workers were standardized as to concentration by Löffler (1881), who added one per cent of peptone (a secondary protein product of gastric digestion) and a small amount of salt. At the end of the nineteenth century, amino acids, such as aspargin, cysteine and tryptophane, were also used in media, as were the digestive ferments, pepsin and trypsin. Blood serum, bile and other animal products continued in standard procedure. At present, there are somewhat over a thousand available liquid media which differ from one another in composition and use.

(To be concluded in October issue)

X-RAY EXHIBIT AT THE STATE MEDICAL SOCIETY MEETING

The Michigan Association of Roentgenologists are preparing a joint exhibition for the seventieth annual meeting of the Michigan State Medical Society at Sault Ste. Marie, September 23 to 26, inclusive. The exhibit will not be the work of any one roentgenologist or any certain group, but will be submitted by the society as a whole. The object is educational and not to display rare or unusual lesions. An alphabetic list of roentgenologists and institutions submitting material will be displayed with the exhibit. Descriptive information regarding various films will be presented in printed form to all physicians viewing the exhibit and roentgenologists of the state will assist in demonstrating during the days of the meeting.

The following is a list of roentgenograms which will be on exhibition.

Table of Contents for Proposed General Radiographic Exhibit to be Presented Under the Auspices of the Michigan Association of Roentgenologists at the State Medical Society Meeting, Sault Ste. Marie, September 23-26, 1935.

No. films to be displayed

Sinuses, Mastoids, Bones of Face—18 Films

1 Clouded sinuses
1 Polyp of sinus
1 Neoplasm of sinus
1 Osteomyelitis of sinus wall
2 Normal mastoids
2 Bone destruction, mastoid
2 Cholesteatoma
1 Fracture, dislocation—bones of face
1 Neoplasm, bones of face
2 Foreign body, orbit
1 Fracture, mandible
1 Osteomyelitis, mandible
1 Neoplasm, mandible
1 Complete set dental films—mounted

Skull—25 Films

2 Depressed fracture, skull
1 Linear or stellate fracture, skull
1 Primary neoplasm, skull
1 Secondary neoplasm, skull
2 Examples of metabolic bone disturbance, skull

Evidence of Intracranial Lesion

1 Abnormal sutures
1 Oxycephaly
1 Intrasellar erosion
1 Local bone destruction or proliferation, tumor site
2 Abnormal calcification, intracranial
2 Encephalogram showing destruction brain substance
2 Ventriculogram, deformity of ventricular system
2 Encephalogram or ventriculogram—internal hydrocephalus

2 Unspecified intracranial tumor, air injection
2 Supratentorial intracranial tumor
2 Infratentorial intracranial tumor

Spine—15 Films

1 Abnormal curvature
1 Spondylolisthesis
2 Hypertrophic spondylitis
2 Soft tissue paravertebral abscess
2 Fractures
2 Epiphysitis, osteochondritis
2 Tuberculosis
2 Secondary neoplasm
1 Abnormal myelogram

Bones Upper Extremity—25 Films

3 Fractures
1 Healing or healed fracture
1 Non-union fracture
1 Epiphysial separation
2 Subluxation or dislocation of joint
3 Tuberculosis, bone or joint
3 Osteomyelitis
1 Osteochondritis
3 Rickets, scurvy
1 Atrophic arthritis
1 Hypertrophic arthritis
1 Metabolic arthritis (gout, hemophilia, etc.)
1 Septic or purulent arthritis
3 Primary neoplasm

Bones Lower Extremity—25 Films

(Same entries as for upper extremity)

Thorax (Mediastinum, Soft Tissues of Neck, Cardio-vascular System)—17 Films

1 Soft tissues of neck, normal
1 Abnormal cervical thyroid
1 Carcinoma larynx
1 Retropharyngeal abscess
2 Non-tuberculous mediastinitis
2 Lymphoblastoma, mediastinum and hila
1 Primary neoplasm, mediastinum or chest wall
1 Secondary neoplasm, mediastinum or chest wall
1 Congenital heart disease
1 Cardiac enlargement
2 Aneurysm
3 Calcification, heart, pericardium, aorta

Thorax (Lungs and Pleura—Non-tuberculous)—36 Films

4 Foreign body, trachea, bronchi, lungs, pleural cavity
2 Extensive pleuritis without effusion
2 Pleural effusion, empyema, before and after drainage
1 Calcification, pleura
1 Hydropneumothorax
1 Pneumonia, lobar
1 Pneumonia, broncho
1 Pneumonia, postoperative
1 Pneumonia, resolving
1 Bronchiectasis suspected
2 Bronchogram, normal
2 Bronchogram, bronchiectasis
2 Bronchogram, abnormal, other than bronchiectasis
1 Pneumonitis, suppurative
2 Pulmonary abscess or cyst
2 Fusospirochetal lung disease
2 Pulmonary infarct
2 Atelectasis, lobular, lobar
1 Pneumoconiosis
1 Radiation fibrosis
1 Bronchogenic carcinoma
1 Metastatic neoplasm, lung
2 Lymphoblastoma, lung

Thorax (Pulmonary Tuberculosis)—12 Films

1 Calcified parenchymal lesion
1 Calcified lymph node
1 Parenchymal lesion, childhood type
1 Non-calcified lymphadenopathy
1 Adult type, minimal extent
1 Adult type, moderately advanced
1 Adult type, far advanced
1 Miliary tuberculosis
1 Induced pneumothorax
1 Phrenic interruption
1 Pneumonolysis, any type
1 Thoracoplasty

Gastro-intestinal Tract—21 Films

1 Esophageal spasm
1 Esophageal diverticulum
1 Esophageal neoplasm
1 Esophageal foreign body
1 Diaphragmatic hernia
1 Gastric ulcer
1 Duodenal ulcer
1 Gastric neoplasm, scirrhous
1 Gastric neoplasm, adenocarcinoma
2 Cholecystogram, normal visualization
2 Biliary stone
1 Diverticulosis of the colon
1 Ulcerative colitis
1 Tuberculous colitis
2 Colonic neoplasm
1 Calcification within abdomen
1 Intestinal obstruction
1 Subphrenic abscess, free peritoneal air

Genito-urinary Tract—21 Films

1 Duplication anomaly
1 Other developmental anomaly
1 Renal calculus
1 Ureteral calculus
1 Hydronephrosis
1 Pyelonephritis
1 Renal tuberculosis
2 Intra-renal mass; neoplasm, cyst, etc.
1 Extra-renal mass; perirenal abscess
1 Pyelovenous, lymphatic backflow opaque media
1 Calculus, bladder
1 Diverticulosis, bladder
1 Prostatic hypertrophy
1 Neoplasm, bladder
1 Normal pelvimetric study, female pelvis
1 Abnormal pelvimetric study, female pelvis
1 Uterogram, normal
1 Uterogram, abnormal
2 Pregnant uterus.

Note: Where two films are indicated for a single entity this represents necessity of two views to adequately show lesion. In the case of gall bladder examinations it represents pre and post fat feeding films.

This outline is intended to adequately cover the entire field of roentgen diagnosis for presentation to the medical profession at large.

Space will also be available for the presentation of clinical photographs and charts dealing with the subject of roentgen and radium therapy. Members are urged to submit any material they wish to in this field.

The 1935 Annual Meeting

THE LOCKS AT SAULT STE. MARIE

MICHIGAN STATE MEDICAL SOCIETY MEETS AT SAULT STE. MARIE

As has been announced, the seventieth annual meeting of the Michigan State Medical Society will be held at Sault Ste. Marie, September 23 to September 26. This is the first time in history of the association that the "Soo" has been chosen as the place of meeting and the upper peninsula medical profession are leaving nothing undone to mark the event and to make the visit of the physicians of the state both pleasant, and as profitable as those meetings held in other cities of the state. Sault Ste. Marie is unique in many respects; its climate, its history, its famous locks, through which is concentrated the major traffic of the great lakes, all combine to make the sojourn of the profession a matter of anticipated interest. Sault Ste. Marie is becoming a popular summer resort because of its pleasant climate and cool breezes off Lakes Superior and Huron. The Sault is noted for its absence of hay fever and the home of the Ca-Choo Club of America. Annually hundreds of folks go there from all parts of the United States seeking relief and do find almost immediate satisfaction. It is said that there is not a ragweed within one hundred miles of Sault Ste. Marie. The Ca-Choo Club, we are informed, is a reality and not merely a facetious name. Its membership consists of erstwhile sufferers from hay fever, about 240 in number, who hail from fourteen different states in the hay fever belt. The activities of this organization consist of social events, picnics and other means of diversion.

Somewhat isolated as this city of about 14,000 inhabitants is, there is naturally an intensity of community spirit. All sports of a red blooded population are indulged in to the full, particularly in winter, skating, hockey, snowshoeing and skiing.

The city has 4,000 homes, ten schools, twelve churches, three banks and fourteen industries besides a real live chamber of commerce of 250 members. It is located on St. Mary's River, which connects the two great bodies of water, Huron and Superior. The ship canal carries more tonnage than that of the Panama and Suez Canals combined. It is a most fascinating sight to see the great freighters and passenger boats lowered some twenty feet with apparently no effort, allowing them to pass with very little delay to their destination. The St. Mary's River, 63 miles long, is the connecting link between Lake Superior and Lake Huron. Between the two lakes the level differs by about 22 feet. The fall is concentrated at the St. Mary's Rapids about 49 miles above the mouth of the river, where in a distance of about three quarters of a mile, the fall varies from eighteen to twenty-one feet. The first canal was built on the Canadian side of the river in 1797-98 by the Northwest Fur Company. From this date until the present time, in keeping with the demands and growth of commerce, improvements and developments have taken place until the following facts give us a fair idea of the locks as they appear today.

Facts About the Locks

Four locks on the American side; one in Canada.

Old State lock was opened in 1855.

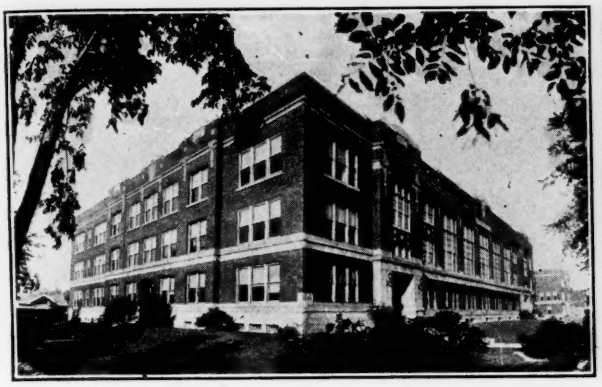
Weitzel lock is 515 feet long and 80 feet wide. It was built in 1881 and is obsolete.

Canadian lock is 900 feet long and 60 feet wide. It was built in 1895.

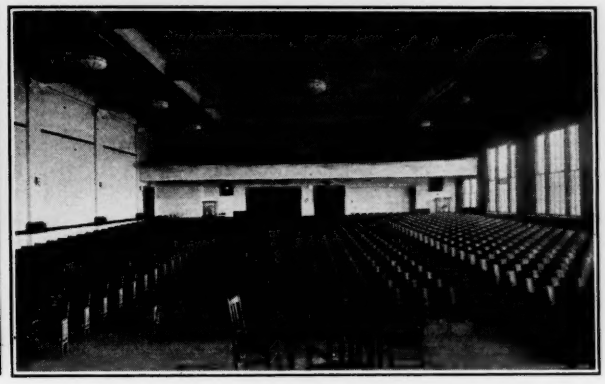
Poe lock is 800 feet long and 100 feet wide. It was built in 1896.

Davis and Sabin locks are 1,350 feet long and 80 feet wide. The Davis lock opened in 1914 and the Sabin in 1919.

No tolls are charged to any vessels.



SENIOR HIGH SCHOOL—CONVENTION HEADQUARTERS



AUDITORIUM OF HIGH SCHOOL WHERE MEETINGS WILL BE HELD

The average freight traffic during the past five years was over eighty-six millions net tons, with a value of over a billion dollars annually. From 1855 to 1881 tolls were charged by the state to cover the expense of operation and repair. In 1881 control was transferred from the state of Michigan to the United States government. Since that time the American canal has been free to the public use of all nations.

History

Sault Ste. Marie has the distinction of being not only the oldest town in Michigan but the oldest in the United States west of the Alleghenies, with the possible exception of Santa Fe, New Mexico. It is older than any town in Canada west of Montreal. The place was first visited by French explorers on their way west, when it was early recognized as the key to the great lakes region. Etienne Brule, who discovered Lake Huron in 1611, was the first white man known to visit Sault Ste. Marie, presumably in 1623, three years after the pilgrims landed at Plymouth Rock.

Jean Nicolet, one of Champlain's young explorers, reached Sault Ste. Marie in 1634. The falls of St. Mary were first named by Father Isaac Jogues and Charles Raymbault, who established a temporary mission at the foot of the falls which they named "Sault de Sainte Marie"—the leap or falls of St. Mary. The first mission church, however, was founded at Sault Ste. Marie in 1668 by Father James Marquette. Since this time the location also became a depot of the Western fur trade, an army post of the French, the British and the American governments. It was also a trading post for the Indians. The inexhaustible quantities of white fish in the river attracted the Indians for hundreds of miles.

Sault Ste. Marie was a French possession until the English victory over the French at the battle of Quebec placed all of French Canada in the possession of the British. During the war of 1812, the traders of the Northwest Fur Company joined with the British Garrison at Fort St. Joe on St. Joe Island. In retaliation, Sault Ste. Marie was visited in 1814 by Major Holmes of the American Army when he destroyed the Northwest Company post on the north side of the river. The British flag flew over the American Sault until June 15, 1820, when it was lowered by Governor Lewis Cass of Michigan who raised the American flag in its place. In 1822 Fort Brady was built on the grounds now occupied by the Federal Building, where it remained until 1893, when it was abandoned and rebuilt on its present site. We see then that, in common with Detroit, Sault Ste. Marie has been garrisoned by French, British and American troops.

Chippewa County, of which Sault Ste. Marie is the county seat, was organized in 1826, when it extended west of the Mississippi, taking in most of the upper peninsula of Michigan and a large part of Wisconsin and Minnesota.

Any historical reference to the Sault region would be wanting if mention of the

Hiawatha legends were omitted. According to Indian mythology, Kwasind, the strong man and friend of Hiawatha, formed the ledges of rock over which St. Mary's River tumbles and dances on its way to the sea.

OJIBWAY HOTEL

Longfellow, as is well known, has immortalized the Hiawatha country.

With its odors of the forest,
With the dew and damp of meadows,
With the curling smoke of wigwams,
With the rushing of great rivers
With their frequent repetitions
And their wild reverberations,
As of thunder in the mountains.

Prominent Physicians Past and Present

When Dr. Beverly D. Harison came to the Soo in 1888, the typhoid mortality, locally, was persistently high; one five year rate was 111 per 100,000. There was no sewerage system in some of the outskirts of the town. Doctor Harison early became the Health Officer of the city and was most energetic in improving the system and the typhoid situation.

With the late Dr. Samuel Bell, he was a large factor in forming the Upper Peninsula Medical Society and was an early president. He was president of Michigan State Medical Society.

The Howell Medical Act of 1883 allowed all (educated or not) who had practised medicine for the five years previous to register. Anyone graduated from a legally authorized medical college anywhere in the world might register, but the law was either seldom or poorly enforced. A fifty cent registration fee to the County Clerk enabled one to practice medicine. The legislators were indifferent to several attempts to improve the situation; the medical men themselves did not agree as to the legislation they wanted. In the late nineties, Dr. B. D. Harison became interested and devoted much of his time to securing restrictive medical legislation. He was assisted by a number of influential physicians of the Soo in inducing William Chandler, a prominent citizen, to stand for election to the legislature and to introduce the Chandler Medical Act, which was made a law in 1899. The Medical Registration Board was formed and Doctor Harison was its first secretary, holding the office for nearly twenty-five years. One of the first results, when registration under the new act was accomplished, was the driving out of some 2,200 men who were practicing medicine illegally.

The Chandler Act had a far-reaching effect, inasmuch as the Medical Registration Acts of more than thirty states were based on it. Dr. Walter I. Bierring refers to Doctor Harison as "the father of Medical Legislation" and says in a personal communication, "The prominent place that the Michigan Medical Board has always maintained in promoting higher ideals of Medical Legislation and Licensure was largely due to initiative and energy characteristic of its learned and accomplished Secretary." Both Doctor Bell and Dr. Harison moved to Detroit, where the Michigan State Board of Medical Registration was located at the time of Dr. Harison's death.

Dr. C. J. Ennis, the Dean of the Profession in the Soo, was born in Dublin, Ireland. He graduated from Carmichael Medical College in 1874, practiced in Western Australia, in the British service until 1882. He came to Sault Ste. Marie the following year: The Doctor has been president of the Chippewa County Medical Society, of the Upper Peninsula Medical Society, was a councillor of State Medical Society for six years. In 1928 he was elected an honorary member of the Michigan Medical Society.

Dr. E. H. Webster came to the Soo first an assistant, later associate, of the late Dr. Harison. He has been president of the Chippewa County Medical Society, of the Upper Peninsula Medical Society, and vice president of the State Society.

Program---The 1935 Annual Meeting

Official Program

70th
ANNUAL MEETING
OF THE

Michigan State Medical Society

FOUNDED JUNE 5, 1866

MEDICAL SOCIETY
OF THE TERRITORY OF MICHIGAN
FOUNDED JAN. 11, 1820

PENINSULAR STATE MEDICAL
SOCIETY
FOUNDED MAR. 30, 1853

SAULT STE. MARIE, MICHIGAN
September 23, 24, 25, 26, 1935

SPECIAL ANNOUNCEMENTS

Ex-Governor Osborn will be guest of honor of the Society and will speak at a luncheon, 1:00 P. M., Monday, September 23. Members, ladies of Auxiliary and guests are cordially invited. Please make reservations at Information Desk, Ojibway Hotel Annex.

Poliomyelitis Exhibit

The A.M.A. Exhibit as shown at Atlantic City. Motion pictures. Twenty-minute talks by Drs. L. J. Schermerhorn, John T. Hodgen, and Edgar E. Martmer, Tuesday and Wednesday.

The John A. Kolmer Exhibit

"Active Immunization of Children against Poliomyelitis." Motion pictures showing application. Demonstration by Dr. Harold R. Roehm, Tuesday, 2:30 P. M.

See Bulletin Board

OFFICIAL CALL

The Michigan State Medical Society will convene in annual session in Sault Ste. Marie on September 23-24-25-26, 1935. The provisions of the Constitution and By-laws and the official program will govern the deliberations.

RICHARD R. SMITH, *President*
JULIUS POWERS, *Chairman Council*
H. A. LUCE, *Speaker*

Attest:
BURTON R. CORBUS, *Secretary*

PROGRAM OUTLINE

COUNCIL MEETING

Council Meeting, Sunday, September 22, 8:00 P. M. —Ojibway Hotel.

HOUSE OF DELEGATES

First Session—Monday, September 23, 3:00 P. M.—Ojibway Hotel Annex.
Second Session—Monday, September 23, 8:00 P. M. —Ojibway Hotel Annex.
Third Session—Tuesday, September 24, 9:00 A. M.—High School Auditorium.

GENERAL SESSIONS

Tuesday, September 24, 8:00 P. M.
Wednesday, September 25, 8:45 A. M.
Wednesday, September 25, 8:00 P. M.
Thursday, September 26, 8:45 A. M.
All General Sessions (Sections combined)—High School Auditorium.
Section on Ophthalmology and Otolaryngology, Wednesday, September 25, 2:00 P. M.—High School.

For further announcements see Page 564.

LOCAL COMMITTEES

General Chairman—F. C. Bandy.
Hotels—G. A. Conrad, F. H. Husband.
Entertainment—W. F. Mertaugh, S. H. Vegors.
Automobile Parking—C. Willison, F. J. Moloney, H. T. Gray.
Scientific Exhibits—J. G. Blaine, F. W. Tamblyn.
Commercial Exhibits—I. V. Yale.

SCIENTIFIC PROGRAM

NOTE: All Sections are combined in General Sessions with the exception of the Section on Ophthalmology and Otolaryngology.

First Session

Tuesday Evening, September 24, 1935
8:00 P. M.

Presiding: MERRILL WELLS, *Chairman*
General Medical Section

1. "Comments on the Medical Managements of the Diseased Gall Bladder"—John H. Musser, M.D., Tulane University, New Orleans, Professor of Medicine.
   Discussant: W. H. Marshall, Flint.
2. "Surgical Aspect of Gall Bladder Disease"—Frederick A. Coller, Ann Arbor.
   Discussant: Earl I. Carr, Lansing.
3. "The Relation Between Physical and Psychic Disturbances"—George W. Hall, M.D., University of Chicago, Professor of Neurology.
   Discussant: H. A. Reye, Detroit.
4. "Maternal Mortality"—Jennings C. Litzenberg, M.D., University of Minnesota, Professor of Obstetrics and Gynecology.
   Discussant: Norman A. Miller, Ann Arbor.

Second Session

Wednesday Morning, September 25, 1935
8:45 A. M.

Presiding: EDGAR E. MARTMER, *Chairman*
Pediatrics Section

1. "Hemorrhages Accompanying Labor"—Jennings C. Litzenberg, M.D., University of Minnesota, Professor of Obstetrics and Gynecology.
   Discussant: Alex M. Campbell, Grand Rapids.
2. "Allergy and the General Practitioner"—Harry L. Huber, M.D., University of Chicago.
   Discussant: Richard M. McKean, Detroit.
3. "Hypoglycemia in the Vagotonic"—Martin A. Mortensen, Battle Creek.
   Discussant: Hugo A. Freund, Detroit.
4. "Compensatory Hypertrophy and Hyperplasia of Islands of Langerhans in Utero, Congenital Hypoglycemia Due to Hyperinsulinism"—Wm. H. Gordon, M.D., Detroit.
   Discussant: Hugo A. Freund, Detroit.
5. "Diseases of the Peripheral Arteries—Their Interference with Normal Physiology and Evaluation of Newer Methods of Treatment"—Walter G. Maddock, M.D., Ann Arbor.
   Discussant: Clare Vale, Detroit.

NOTE: There will be no general discussion. Invited discussants are limited to seven minutes.

CLINICAL PATHOLOGICAL CONFERENCE

Wednesday Afternoon, September 25, 1935
3:30 P. M.

Conducted by Drs. WM. MCK. GERMAN and JAMES E. DAVIS

PRESIDENT'S NIGHT

Wednesday Evening, September 25, 1935
8:00 P. M.

1. Music.
2. Invocation.
3. Welcome.
4. Announcements—B. R. Corbus, Secretary.
5. President's Address: "Michigan and Our Profession Today and Yesterday"—Richard R. Smith, M.D., Grand Rapids.
6. Induction into Office as President—Grover C. Penberthy, and response.
7. The Andrew P. Biddle Oration: "The Status of the Hypertension Problem"—S. Marx White, M.D., University of Minnesota, Professor of Medicine.

Third Session

Thursday Morning, September 26, 1935
8:45 A. M.

Presiding: H. K. SHAWAN, *Chairman*
Surgical Section

1. "Common Lesions of the Cervix"—Norman F. Miller, M.D., Ann Arbor.
   Discussant: Harold A. Furlong, Pontiac.
2. "Postoperative Oxygen Therapy"—Erwin R. Schmidt, M.D., University of Wisconsin, Madison, Professor of Surgery.
   Discussant: Frank J. Murphy, Detroit.
3. "Common Fungus Dermatoses"—Lester M. Wieder, M.D., Milwaukee, Wis.
   Discussant: A. R. Woodburne, Grand Rapids.
4. "Achlorhydria—Its Clinical Significance and Management"—C. Emerson Vreeland, M.D., Detroit.
   Discussant: E. L. Eggleston, Battle Creek.

SPECIAL SECTION PROGRAM

OPHTHALMOLOGY - OTOLARYNGOLOGY*

Wednesday, September 25, 1935
2:00 P. M.

J. W. ORR, *Chairman,* Flint
D. R. HEETDERKS, *Secretary,* Grand Rapids

1. "Chronic Rhinitis—Allergic and Non-allergic"—Harry Huber, M.D., Chicago.
   Discussant: Geo. L. Waldbott, Detroit.
2. "Surgical Treatment of Retinal Detachment"—F. Bruce Fralick, M.D., Ann Arbor.
   Discussants: John McRae, Grand Rapids.
   Edgar Poos, Detroit.
3. "Paralysis of the Larynx"—Albert Furstenberg, M.D., Ann Arbor.
   Discussants: Carl Snapp, Grand Rapids.
   Carl Wencke, Battle Creek.
4. Round Table.

*Invited discussants will be limited to seven minutes. Discussions from the floor strictly limited to five minutes.

SCIENTIFIC EXHIBITS

All Scientific Exhibits will be in the Exhibit Hall—High School

"Allergic Shock"—Geo. L. Walbott, Detroit.

"Thoracic Surgery"—Wm. L. Hudson, Detroit.

Michigan Association of Roentgenology—Direction: R. H. Stevens, Detroit.

"Cranio-Cerebral Injuries and Their Management"—E. S. Gurdjian, Detroit.

"Treatment of Burns with Tannic Acid"—Motion Pictures—Grover C. Penberthy and C. N. Weller, Detroit.

"Hematuria"—Robert A. MacArthur, Detroit.

"Plastic and Reconstructive Surgery"—Claire L. Straith, Detroit.

"Cancer and Cancer in Michigan"—Direction F. L. Rector, Evanston, Illinois. Auspices—Cancer Committee, Michigan State Medical Society and the American Society for Control of Cancer.

"Poliomyelitis"

Direction L. J. Schermerhorn, Grand Rapids

1. Special exhibit by courtesy A.M.A. Motion pictures—
   a. "Early Treatment of Poliomyelitis—E. B. Shaw, San Francisco.
   b. "The Relation of the Experimental Disease to the Human Disease"—S. D. Kramer, Brooklyn.

   Twenty-minute discussions Tuesday afternoon and Wednesday—L. J. Schermerhorn, Grand Rapids; John T. Hodgen, Grand Rapids; Edgar E. Martmer, Detroit.

2. "Kolmer's Method of Active Immunization of Children Against Infantile Paralysis"—Motion pictures. A very special exhibit—courtesy of John A. Kolmer, M.D., Philadelphia, through Harold R. Roehm, M.D., of Birmingham, Mich.

   Note: Dr. Roehm will present this exhibit with a discussion of its clinical application at 2:30 P. M., Tuesday.

Preventive Medicine Committee—Direction L. O. Geib, Detroit. A demonstration of the practical application of Schick, Tuberculin Tests, et cetera. Courtesy of Michigan Department of Health, Michigan Tuberculosis Society.

"The Development of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY." "Publications and Literature of the A.M.A."—Direction J. H. Dempster, Editor.

Michigan Department of Health—C. C. Slemons, Commissioner. Exhibit showing the varied activities of the department.

COMMERCIAL EXHIBITORS

Bard-Parker Company, Inc., Danbury, Conn.
H. G. Fischer & Co., Inc., Chicago, Ill.
General Electric X-Ray Corporation, Chicago, Ill.
Gerber Products Co., Fremont, Mich.
The J. F. Hartz Company, Detroit, Mich.
H. J. Heinz Company, Pittsburgh, Pa.
Horlick's Malted Milk Corporation, Racine, Wis.
The G. A. Ingram Co., Detroit, Mich.
Kellogg Company, Battle Creek, Mich.
A. Kuhlman & Company, Detroit, Mich.
Lederle Laboratories, Inc., New York City, N. Y.
Libby, McNeill & Libby, Chicago, Ill.
Mead Johnson & Co., Inc., Evansville, Indiana.
The Medical Protective Co., Wheaton, Ill.
Physiotherapy Equipment Co., Detroit, Mich.
Philip Morris & Co., Ltd., New York, N. Y.
Randolph Surgical Supply Co., Detroit, Mich.

WOMAN'S AUXILIARY

PROGRAM FOR MEDICAL AUXILIARY CONVENTION

September 23, 24 and 25, 1935

Headquarters—Country Club

Monday, September 23

1:00 P. M.—Auxiliary Members and Guests are invited to a luncheon at the Ojibway Hotel in honor of Ex-Governor Osborn, who will speak on "The Early History of Sault Ste. Marie."
Please make reservations.

Tuesday, September 24

10:00 A. M.—Pre-convention Board meeting at the Country Club with County Presidents as guests—Mrs. F. T. Andrews, presiding.
11:00 A. M.—County Presidents' meeting—Mrs. A. M. Giddings, President-Elect, presiding.
12:30 P. M.—Luncheon at the Country Club—Tickets 75 cents.

Tuesday Afternoon

Boat trip through the Locks across the head of the rapids and up the river.

Wednesday, September 25

10:00 A. M.—General meeting—Reports of Delegates and election of officers.
12:30 P. M.—Luncheon at the Country Club—Tickets $1.00. Speaker, Ex-Governor Chase S. Osborn.
4:00 P. M.—A complimentary reception and tea for the new President by Chippewa-Mackinac County physicians' wives.

All General Meetings of the Michigan State Medical Society are open to the Auxiliary and guests.

Local Committee: Mrs. F. C. Bandy, Mrs. I. V. Yale, and Mrs. F. W. Tamblyn.

ANNOUNCEMENTS

Registration Booth in Exhibit Hall—High School.

YOUR ATTENTION is called to the unusual SCIENTIFIC EXHIBITS. Motion pictures are shown in many booths. Lectures and discussions at stated hours.

Please watch the Bulletin Board.

Beverly D. Harrison, M.D.

The Chippewa-Mackinaw County Medical Society plans to honor the memory of Doctor Harrison, a former resident of Sault Ste. Marie and for a long time secretary of the State Board of Registration.

It is hoped that the plans may be sufficiently far advanced to give those attending this meeting the opportunity of joining the local profession in recognizing the valiant work of Doctor Harrison in helping to establish and operate the Michigan Medical Practice Bill.

Poliomyelitis Exhibit

The threatened epidemic will make this exhibit of special interest. You will find it in the room opposite the entrance to the Exhibit Hall.

John A. Kolmer, M.D., of Philadelphia, who was to have been our guest and whose subject was to have been "Active Immunization of Children Against Infantile Paralysis," has been kind enough to send on his motion pictures and his exhibit. This has been made possible through Dr. Harold R. Roehm of Birmingham, Michigan, who will present Doctor Kolmer's work on Tuesday afternoon.

You will be much interested in the exhibit of the Michigan Association of Roentgenology, under the direction of Dr. R. H. Stevens of Detroit.

The exhibit consists of 215 films, reduced to a 10x12 size, covering every region of the body. The normal as well as the abnormal appearance will be shown. An important educational opportunity.

To Dr. H. K. Shawan who is largely responsible for the assembling of the splendid scientific exhibit and to Dr. Wm. McK. German for his valuable advice and help in arranging it, the thanks of the Society and the Secretary are accorded.

Do not forget to give full attention to the COMMERCIAL EXHIBITS. Our exhibitors have been most loyal to us this year. Show them that you appreciate it.

Entertainment

The Chippewa-Mackinaw County Medical Society will be host to the House of Delegates following the Monday evening session.

On Wednesday evening our hosts will honor President Smith and guests of the Society with a reception and buffet supper at the Hotel Ojibway.

Golf in Canada or America. Low green fees.

Frequent excursions on the beautiful St. Mary's River, Tuesday and Wednesday.

Watch your Bulletin Board.

Make your reservation for the luncheon honoring Governor Osborn, Monday, 1:00 P. M., at Information Desk, Ojibway Hotel Annex.

Michigan State Ferry

Fall Schedule

Effective September 10th to November 9th, inclusive
(Two Boats)

Leave Mackinaw City	Leave St. Ignace
6:00 A. M.	6:00 A. M.
7:30 "	7:30 "
9:00 "	9:00 "
10:30 "	10:30 "
12:00 Noon	12:00 Noon
1:30 P. M.	1:30 P. M.
3:00 "	3:00 "
4:30 "	4:30 "
6:00 "	6:00 "
7:30 "	7:30 "
9:00 "	9:00 "

HOUSE OF DELEGATES

Speaker: H. A. LUCE, Detroit
Vice Speaker: F. E. REEDER, Flint
Secretary: B. R. CORBUS, Grand Rapids

First Session

Monday, September 23, 1935—3:00 P. M.
Ojibway Hotel Annex

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call of Delegates.
4. Speaker's Address.
5. President's Address.
6. Annual Report of the Council.
7. Appointment of Reference Committees
   (a) Council Reports
   (b) Society Business
   (c) Miscellaneous Business
   (d) Reports of Committees.
8. Committee Reports:
   (1) Legislation
   (2) Woman's Auxiliary
   (3) Radio Committee
   (4) Preventive Medicine
   (5) Delegates to A.M.A.
   (6) Maternal Welfare
   (7) Cancer Committee
   (8) Economics Committee.
9. Recess until evening session.

Second Session

Monday, September 23, 1935—8:00 P. M.
Ojibway Hotel Annex

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call of Delegates.
4. Unfinished Business.
5. Resolutions and New Business. (All resolutions are to be presented in triplicate.)
6. Unfinished Business.
7. Recess.

Third Session

Tuesday, September 24, 1935—9:00 A. M.
High School Auditorium

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call of Delegates.
4. Reports of Reference Committees.
5. Elections:
   (1) President-Elect.
   (2) Report of Nominating Committee.
   (3) Election of Delegates and Alternates to A.M.A.
   (4) Councilors:
   2nd District—J. E. McIntire—Retiring.
   3rd District—George C. Hafford—Retiring.
   15th District—Frederick A. Baker—Retiring.
   16th District—A. S. Brunk—Retiring.
   (5) Place for 1936 Meeting.
   (6) Election of Speaker.
   (7) Election of Vice Speaker.
6. Unfinished Business.
7. Adjournment.

CREDENTIALS COMMITTEE

L. T. Henderson, Chairman—Wayne County.
A. T. Hafford—Calhoun County.
C. Ten Houten—Kalamazoo County.
L. W. Switzer—Mason County.
A. E. Stickley—Ottawa County.

This committee will receive and pass upon Delegates' credentials. Delegates must secure their credentials from their County Secretary.

DELEGATES

NOTE: Names of Delegates are in capitals, Alternates in lower case type.

Alpena County
F. J. O'DONNELL
A. R. Miller

Barry County
H. S. WEDEL

Bay-Arenac-Iosco
L. F. FOSTER
J. H. McEwan

Berrien County
W. C. ELLET
Dean Richmond

Calhoun County
C. S. GORSLINE
A. T. HAFFORD
W. L. Godfrey
A. D. Sharp

Cass County
W. C. McCUTCHEON
W. R. Lyman

Chippewa-Mackinac
F. C. BANDY
J. C. Blain

Clinton County
DEAN W. HART
F. D. Richards

Eaton County
A. G. SHEETS
C. S. Sackett

Genesee County
F. E. REEDER
GEORGE CURRY
C. F. MOLL
R. S. Halligan
Donald R. Wright
Max Burnell

Gogebic County
W. E. TEW
W. L. Maccani

Grand Traverse-Leelanau
E. F. SLADEK
H. B. Kyselka

Gratiot-Isabella-Clare
WILLIAM BARSTOW

Hillsdale County
C. J. POPPEN
H. F. Mattson

Huron-Sanilac County
D. D. McNAUGHTON
W. B. Holdship

Ingham County
KARL BRUCKER
L. G. CHRISTIAN
Fred Huntley
Ford DeVries

Ionia-Montcalm County
M. A. HOFFS
Lloyd S. Dunkin

Jackson County
PHILLIP RILEY
JAMES O'MEARA
H. A. Brown
C. S. Clarke

Kalamazoo, Allegan and Van Buren
CHAS TEN HOUTEN
F. T. ANDREWS
R. G. COOK
F. M. Boothby
H. H. Stryker
W. R. Vaughan

Kent County
A. V. WENGER
H. J. PYLE
R. H. DENHAM
C. F. SNAPP
G. H. SOUTHWICK
Leon Sevey
J. C. Foshee
M. E. Roberts
A. J. Baker

Lapeer County
D. W. CRANKSHAW
D. J. O'Brien

Luce County
R. E. SPINKS

Macomb County
JOSEPH N. SCHER
Russel Salot

Manistee County
A. A. McKAY
K. M. Bryan

Marquette-Alger County
VIVIAN VANDEVENTER
R. A. Burke

Mason County
L. W. SWITZER
C. A. Paukstis or
H. B. Hoffman

Mecosta County
GORDON H. YEO
L. F. Chess

Menominee County
W. S. JONES
H. T. Sethney

Monroe County
D. C. DENMAN

Muskegon County
ROY H. HOLMES
Frank Garber, Sr.

Newaygo County
W. H. BARNUM
O. D. Stryker

Northern Michigan
FRED C. MAYNE
Guy C. Conkle

Oakland County
FRANK MERCER
ROBERT H. BAKER
Ernest Bauer
Chas. A. Neafie

Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw
C. R. KEYPORT
C. G. Clippert

Ontonagon County
C. F. WHITESHIELD
F. W. McHugh

Ottawa County
A. E. STICKLEY
J. G. Huizinga

Schoolcraft County
GEORGE A. SHAW

Shiawassee County
I. W. GREENE
W. E. Ward

St. Clair County
A. L. CALLERY
T. E. DeGurse

Tuscola County
O. G. JOHNSON
A. S. Rundell

Washtenaw County
JOHN WESSINGER
DEAN W. MYERS
JOHN SUNDEWALL
H. B. Britton
Mark Marshall
Harold Barss

Wayne County
WM. J. CASSIDY
JOS. H. ANDRIES
J. M. ROBB
T. K. GRUBER
H. WELLINGTON YATES
H. W. PLAGGEMEYER
R. C. JAMIESON
L. J. HIRSCHMAN
RALPH H. PINO
FRANK A. KELLY
L. T. HENDERSON
WM. J. STAPLETON, JR.
R. M. McKEAN
A. E. CATHERWOOD
A. W. BLAIN
HUGO A. FREUND
W. R. CLINTON
W. D. BARRETT
E. D. SPALDING
C. F. BRUNK
A. F. JENNINGS
H. F. DIBBLE
C. E. UMPHREY
LOUIS J. GARIEPY
DAVID I. SUGAR
A. P. BIDDLE
JOHN L. CHESTER
Chas. S. Kennedy
Fred B. Burke
Stanley W. Insley
Wm. S. Reveno
C. E. Dutchess
C. K. Hasley
E. C. Baumgarten
B. U. Estabrook
A. H. Whittaker
M. H. Hoffmann
Basil L. Connelly
L. O. Geib
R. V. Walker
C. R. Davis
Allan McDonald
H. L. Morris
Howard W. Peirce
Frank Kilroy
A. J. Himmelhoch
W. R. McClure
Frank A. Weiser
Frank Purcell
Wm. H. Honor
V. L. Van Duzen
W. P. Woodworth
Daniel P. Foster
H. W. Hewitt

Wexford County
W. JOE SMITH
J. F. Garber

COMMITTEE REPORTS

RADIO COMMITTEE

To the House of Delegates:

As per the request of the Secretary, I am giving a report on the work of the Radio Committee for 1934-1935.

The Committee is as follows:
Dr. Wm. J. Stapleton, Jr., Detroit, Chairman.
Dr. A. J. Himmelberger, Lansing.
Dr. Kenneth Lowe, Battle Creek.

In the letter of appointment was the following paragraph: "The Executive Committee is instituting a program looking to the correlation and direction of committee activities. In the furtherance of this program, the Secretary was instructed to communicate with the Chairman of the Radio Committee, advising him that it is the desire of the President and the Executive committee that as part of their program they include several broadcasts on 'Incidence of Sickness as a Liability' for which provisions should be made. In formulating the work of your committee, I trust you will work out his desire."

In accordance with the above, the chairman wrote the A.M.A. for material along this line. The following quotation from Dr. R. G. Leland, Director of the Bureau of Medical Economics, is: "The subject of medical economics in all of its phases is our complex, that it is difficult to present a portion of it in a fifteen minute radio talk without the danger of being misunderstood. I have refrained several times from presenting these subjects over the radio, and I am still of the opinion that this is one phase of medical broadcasts that should be avoided. If a medical economics broadcast is not extremely well done, the dangers therefrom far outweigh the gains. It is possible that, as we accumulate more information, we may be able to present the subject at some future time, but I do not recommend it at present."

A copy of this letter was sent to the secretary, who replied that the matter would be referred to the Executive Committee for consideration.

The Radio Committee in a letter from the President was asked to continue its work and amplify the same. Accordingly, a letter was sent to the Secretaries of all County Societies who had a radio station in their district. The list consists of the following counties: Calhoun, Genesee, Gogebic, Kalamazoo, Kent, Lapeer, Marquette, Muskegon, Ingham, and Wayne.

Listening to radio is second only to reading newspapers and magazines in a recent survey of the leisure hours of 5,000 people as reported by the National Recreation Association.

Listening to radio ranked second in the number of individuals by whom it was reported as well as among the activities taken part in most often.

In view of the above, we quote the following from the *Detroit Medical News:*

"Air Conditioning" Necessary

In spite of persistent protests by medical and educational organizations, an unwholesome situation with respect to radio advertising still exists. The old game of baiting the public goes merrily on—from early morning to the final "sign-off" at midnight. Extravagant therapeutic claims for remedies of dubious value—blatant ballyhoo of cosmetics that cannot conceivably justify the claims made for them, and, above all, the poor taste displayed in praising (usually at the dinner hour) the virtues of laxatives and deodorants, are evidences of a sorry misuse of an important vehicle of public information. Attempts to justify this practice on the ground that radio entertainment is offered free to the public at

great expense to the sponsor, and that surcease from annoying broadcasts may be obtained by the simple expedient of turning the dial, do not meet the objections. The simple fact that the general public is not only being duped but actually harmed by fraudulent claims merits a determined effort to do away with the evil. We can never forget the case of an old man presented before a clinical-pathological conference who had died of a perforated gastric ulcer after taking a dose of a highly-advertised cathartic, praised nightly on a well-known program as a quick, reliable, and harmless remedy for stomach distress. The evils of self-medication which contribute so largely to the continued high mortality rate of appendicitis alone will never be eradicated as long as this situation is allowed to exist. At the recent convention of the Advertising Federation in Chicago, Chairman E. J. Adams, of the special board of investigation of the Federal Trade Commission, warned the radio industry to follow the lead of the newspapers and clean its house of bad advertising.

It is gratifying to note that past protests have not been entirely fruitless. The Columbia Broadcasting System has recently announced a decision to exclude from its broadcasts all descriptions of body functions and symptoms which are generally not considered acceptable topics in social groups. The National Broadcasting Company has for some time been quietly eliminating some of the more meretricious features. These are steps in the right direction which other chains would do well to follow. But this is only the beginning. The Augean stables needed more than a deodorant!

That the physicians of Detroit can play Hercules and remedy local conditions at least is demonstrated by the fact that, as a result of protests by the Milwaukee professions, Station WTMS (*The Milwaukee Journal*) has decided to exclude all "medical accounts" except those approved by the Milwaukee County Medical Society. Following this lead, Station WISN (The Wisconsin News) has requested the Milwaukee County Medical Society to designate which of its broadcasts do not meet with approval. While no concerted action by the medical profession has been taken to improve the situation in Detroit, the executive office of the Wayne County Medical Society was recently consulted by a well-known radio commentator of Station WWJ (*The Detroit News*) concerning the extravagant claims made for a highly-advertised patent medicine. He was supplied with authentic information concerning this product and, as a result, certain objectionable features of the broadcast have been deleted. Radio stations WJR, WXYZ, CKLW, WMBC, WJBK, WEXL please follow!

The Committee on Public Information of the Wayne County Medical Society has performed a commendable work in providing authoritative information on medical subjects through weekly broadcasts sponsored by the Society. The educational value of these programs is unquestionable. The *Detroit Medical News* suggests that the activities of this committee be extended—that it be empowered to wage an active fight against the fraud and quackery in radio advertising. What Milwaukee has done can also be done in Detroit.

Instead of "tuning off" an objectionable program, "ring up" the offending station and voice your objection.

The Radio Committee supplies talks to the various groups at any time. We obtain many of these from the A.M.A. Others are written by various physicians, copies are made, some go to the A.M.A. and others to various county groups. We are also in contact with Dr. Barnes of the A.M.A., who is most helpful.

We receive the *Bulletin of Education by Radio* published in Washington.

We receive from time to time letters asking for information regarding talks and presentations from people interested in the use of the radio for various purposes.

"The Physician's Duty to the Public, the Principles of Medical Ethics of the A.M.A.," has the following rule with regard to the obligations of the medical profession to the public: "Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning Public Health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of the community. They should coöperate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine."

Appended hereto is a list of radio subjects presented through Ingham, Wayne, and Gogebic County Medical societies.

Respectfully submitted,
DR. WM. J. STAPLETON, JR.,
Chairman.

PREVENTIVE MEDICINE COMMITTEE

To the House of Delegates:

I wish to submit the following report for the year 1935 in behalf of the Preventive Medicine Committee.

This committee held three meetings during the past year: on November 6, 1934, at Lansing, Michigan, at the Hotel Olds; on June 26, 1935, at Flint, Michigan, at the home of Dr. F. B. Miner, and on August 11, 1935, at "Point Lookout," summer home of Dr. J. D. Foster, Au Gres, Michigan.

The committee wishes to thank Drs. Slemons and Barrett of the State Health Department and Dr. Vaughan of the Detroit Department of Health for their coöperation and advice as well as for their attendance at the committee meetings.

The Preventive Medicine Committee recommends to the Michigan State Medical Society:

1. (a) That under the auspices of the Joint Committee and in coöperation with the University of Michigan, intensive resident courses be given at the Herman Kiefer Hospital, Detroit, for which those attending may receive University credit, the courses to be given as follows:

1—5 day week—Contagious Diseases.
1—5 day week—Tuberculosis.
1—5 day week—Venereal Diseases.
1—5 day week—Administration and Laboratory.
1—5 day week—Prenatal and Infant Feeding.

(b) That one day in each Regional Conference be devoted to Preventive Medicine and Public Health, with such programs as were conducted in Bay City, Traverse City and elsewhere by the Preventive Medicine Committee.

2. County Health Units (not practising units): This committee reaffirms its belief that medical participation can best be carried out under a plan of County Health Units. Information should be imparted to the component medical societies relative to funds available for Public Health projects under the National Security Act, acquainting them with their rights and privileges, and asking them to urge their governmental units to submit to the Michigan Department of Health requests for such funds in such manner as may be acceptable to the

physicians of that particular County Medical Society.

3. The committee suggests that continued coöperation through a joint committee, with the Michigan Tuberculosis Society and the Michigan Department of Health, since the passage of the National Security Act is more than ever desirable. The following plan was adopted by the Michigan Tuberculosis Society and the Council of the Michigan State Medical Society:

(1) A Tuberculosis Bureau with a trained director.
(2) A case-finding program.
(3) A hospitalization program.
(4) Use to be made of the practising physicians and local health equipment.

To detail the above principles the following outline was adopted as indicated:

A Tuberculosis Bureau in the State Department of Health to be active in,

(1) *Case Finding,* by
  (a) Stimulating interest in diagnosis and case reporting by private physicians, by
    1. Instruction—post-graduate in coöperation with the University.
    2. Assistance in providing x-ray facilities.
    3. Proper reimbursement of physicians for diagnosis and care of indigents.
    4. Aid in placement for care.
    5. Check-back on all reported cases for examination of contacts.
  (b) Lay Education in Tuberculosis, by
    1. Coöperation with existing organizations, such as the Michigan Tuberculosis Society, and the Preventive Medicine Committee of the State Medical Society.
(2) *Hospitalization,* by
  (a) Insistence that counties properly assume financial burden of care of indigents.
  (b) Studying available facilities for care and supervising care utilizing all available tuberculosis beds and using beds in general hospitals where proper facilities exist.
  (c) Recommending additional facilities where definitely needed.
(3) *After Care and Follow-up,* by
  Looking after proper placement of patient after hospital treatment is over by referring to proper medical care at home, and to proper rehabilitation assistance as far as can be provided in needful cases.

4. That an exhibit at the State Medical Meeting be given by the Michigan State Health Department, Michigan Tuberculosis Society, and Preventive Medicine Committee, this to be a demonstration of Preventive Health methods.

5. The committee again suggest the hiring of a full-time medical coördinator to carry out the program of the Preventive Medicine Committee, as suggested in the annual report and accepted by the last meeting of the House of Delegates.

6. The committee recommends that County Medical Societies give program space to Preventive Medicine.

Respectfully submitted,
LEDRU O. GEIB, *Chairman.*

CANCER COMMITTEE

To the House of Delegates:

During the past year four meetings of the Cancer Committee have been held. The committee has felt that its function was largely that of cancer education both in and outside of the profession and at its first meeting outlined the following program:

1. Cancer education in high schools and parent-teacher groups.
2. Utilization of newspapers and the radio as media for presenting cancer facts to the laity.
3. Extension of postgraduate medical education along cancer lines.
4. Investigating the possibility of obtaining a fact-finding survey of cancer in Michigan.

The high school education program was started in Grand Rapids by Dr. Vanden Berg, who during the winter gave illustrated cancer talks before about forty high schools and parent-teacher groups in and about Grand Rapids. At the present time arrangements are being made to present similar programs in and about all of the principal cities of the state by members of the Society well qualified for the work.

The Council of the Society in January appropriated $500 for a newspaper cancer campaign during the current year. As a result over 400 newspapers of the state are at present receiving short cancer talks weekly for twenty-six weeks. This work is being supervised by Dr. Weller and the University of Michigan has contributed its facilities generously for this purpose. In the next few months one of the large metropolitan newspapers has promised to devote considerable space to cancer at the Committee's direction.

Dr. Bruce has manifested much interest in the work of the Committee and promises the development and extension of cancer education as an activity of the Post-Graduate Department of the University.

Arrangements were successfully made with the American Society for the Control of Cancer for a cancer survey by Dr. F. L. Rector representing the American Society. This survey, which required three months, has now been completed and will be reported in the JOURNAL in the near future. The Michigan State Society incurred no expense as a result of the survey.

The Committee is now making arrangements for a cancer exhibit for the next annual meeting of the Society at the Soo.

All meetings of the present cancer committee have had a perfect attendance. The Committee wishes to express its appreciation for the support and sympathy it has received from the officers of the Society.

There can be no doubt that this Committee has an important function in centralizing, crystallizing and coördinating the activities of several similar organizations in and out of the State which are interested in an improvement of the cancer situation.

OSBORNE A. BRINES, *Chairman.*
HAROLD JACOX
C. C. SLEMONS
HENRY VANDENBERG
C. V. WELLER.

WOMEN'S AUXILIARY ADVISORY COMMITTEE

The activities of the Advisory Committee to the Woman's Auxiliary have been confined the past year to personal conferences with various officers of the state and some county organizations. Our advice has been sought in connection with legislative and economic questions. It was the pleasure and privilege of the chairman to attend meetings of the state executive committee and officers, as well as meetings of the Wayne and Jackson County Auxiliaries. The Woman's Auxiliary is doing a fine job in an effective way and excellent results may constantly be expected.

LOUIS J. HIRSCHMAN, *Chairman.*

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

and

THE MICHIGAN STATE MEDICAL SOCIETY

Progressive Four-Year Program of Postgraduate Study
1935-36 Schedule

Short, Intensive Courses

Grand Rapids	**Bay City**
Flint	**Manistee-Traverse City-Cadillac, Jointly**
Battle Creek-Kalamazoo, Jointly	**Upper Peninsula***

One day each week for eight weeks, beginning week of September 30. The week of October 14 will be omitted to permit attendance on Inter-State Postgraduate Medical Association Assembly at Detroit.

The following subjects will be presented:

Maternal Welfare; Gynecology. Pulmonary Disease; Diseases of Joints.

Neuro-psychiatry; Metabolic Diseases. Diseases of the Blood and Blood-forming Organs. Child Welfare. Skin Diseases; Cancer. Genito-Urinary Diseases; Ano-Rectal Diseases. Fractures; Biliary Tract Disease.

One Week Courses

Detroit. Proctology. Gynecology, Obstetrics and Gynecological Pathology. Minor, Emergency and Traumatic Surgery. General Medicine. Genito-Urinary Surgery. Pediatrics.

Ann Arbor. Electrocardiographic Diagnosis. Diseases of Blood and Blood-Forming Organs. Diseases of Metabolism. Ophthalmology and Otolaryngology. Roentgenology. Surgery. Laboratory Technic.

For information, address:

Department of Postgraduate Medicine
University Hospital
Ann Arbor, Michigan.

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*By request of Upper Peninsula physicians the program will be deferred until May, 1936.

DEPARTMENT OF SOCIETY ACTIVITY

Edited by The Secretary

MINUTES OF THE AUGUST 1 MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL

The Executive Committee met at Saginaw August 1 pursuant to a special call to discuss problems presented by recent legislative action relative to the care of afflicted children in Michigan, and to hear Doctor Fenech, of the Crippled Children's Commission, who was present by invitation.

Present: Chairman Powers, President Smith, President-Elect Penberthy, and Doctors Boys, Carstens, Heavenrich, McIntyre and Councilor Urmston, Ex-President LeFevre, Doctor Fenech, Secretary-Elect Ekelund and Secretary Corbus.

The Secretary briefly reported on the present status of the program for the Annual Meeting. He stated that the council at the January meeting, pursuant to a resolution presented by section officers, had established the Andrew P. Biddle Lectureship. Under this resolution it is provided that recognition be given the orator of the occasion. The Secretary requested the committee to decide the form of this recognition. On motion of McIntyre-Heavenrich, the chairman was directed to appoint a committee for this purpose and the tentative sum of twenty-five dollars was appropriated for the use of this committee. The Chairman appointed President Smith, President-Elect Penberthy and Doctor Carstens as the Committee.

The Secretary noted that the Budget Committee had neglected to place in the budget the usual appropriation for "Society Activities." Since this appropriation has always been in part used as a contingent fund, he suggested that authorization be given to transfer the Contingent Fund to this heading together with $800.00 from the Committee Reserve Fund, these items equalling the usual appropriation. On motion of Heavenrich-Luce it was so ordered.

The Secretary read a communication from Doctor Stapleton and Mr. Barbour relative to a recent malpractice suit where the defendant hired local counsel without authorization, and requests payment for such services. On motion of Luce-McIntyre, the Secretary was instructed to write the Secretary of the Medico-Legal Committee to the effect that such payment would be contrary to the established policy of the Society and to state that the Executive Committee with the representations now before it, is not convinced that the Society has any responsibility in the matter.

Communication was presented from the Bruce Publishing Company regarding the obligation of the Society for the publication of the Medical History of Michigan. The communication pointed out that no final settlement had been made, that the publication showed a loss of about seven thousand dollars, that the Bruce Publishing Company was willing to share that loss with the State Society but desired that the matter be cleaned up as quickly as possible. On motion of Luce-McIntyre, the Secretary was instructed to present a full accounting as a special order business for the September meeting of the Council. In discussion, the educational value of the History was stressed by Doctor Penberthy and he suggested that the placing of copies of the History in High Schools and Libraries might be a worthy objective for which funds might be obtained from some philanthropist or philanthropic institution. Heavenrich moved, seconded by McIntyre, that a committee be appointed to contact the directors of the Rackham Foundation with the suggestion. Chairman Powers appointed Penberthy, Luce and Carstens.

The next order of business was the discussion of the new Afflicted Child Act, the occasion for this special meeting. The Chairman called upon Doctor Fenech, medical representative of the Crippled Children's Commission, a transcript of whose talk follows.

History and Present Status of the Afflicted Child Act

Doctor Fenech traced briefly the history of the Crippled Children's Commission from its beginning in 1917. He noted that it was a legislative response to a public demand and especially was the result of activity on the part of the Crippled Children's Society, which had long been active in the work. He commented on the established policy of the Commission, which was to give the best professional care possible to the crippled child, with a reasonable remuneration to the specialist on whom the responsibility of the treatment of these cases rested. He spoke of the growth of the work as the people of the state became aware, through national luncheon clubs and other organizations, of the opportunities which were presented.

He stated that Act 274 of 1913, as amended by Act 248 of 1933, placed the administration of the Afflicted Child Act under the Crippled Children's Commission. With this additional load the work of the Crippled Children's Commission has been made increasingly difficult by reason of:

First, the increase in the load. Whereas before the passage of this Act about five thousand crippled children were passing through the Commission, there are now upwards of twenty thousand.

Second, the inability to obtain sufficient appropriation to adequately enlarge the office staff to the size necessary to efficiently take care of the increased load. As a consequence deficits have been incurred yearly.

Doctor Fenech showed that following the passage of the Afflicted Child Act of 1933 (Act 248), an appropriation of $800,000.00 was made to take care of the administration of both the Crippled and Afflicted Child Act. (It could not be ascertained how much would be actually needed.) However, it must be noted also that the legislature of 1933 made a deficiency appropriation of approximately $950,000.00 to the general fund designated "Medical Care of Children," which was owing from the previous year for care of the afflicted child. This deficit was not one of the Crippled Children's Commission but one shifted to it by the passage of Act 248 of 1933. The deficit which because the administration of Act 274 as amended by Act 248 of 1933 was placed under the Commission, had to be paid through it with the above mentioned deficiency appropriation.

This same legislature made a special appropriation later of $500,000.00 to take care of the work. This makes a total of $2,250,000.00 but only $1,300,000.00 was actually spent in the years 1933-1934 for the administration of both the Afflicted and Crippled Children's Act.

The appropriation for 1934-1935 was $800,000.00 The legislature of 1935 made a deficiency appropriation of $565,000.00, making a total of $1,365,000.00 and there will still be a deficit of probably $200,000.00 up to June 30, 1935.

This explanation was made to show that the appropriations made to take care of the two above mentioned acts had always been insufficient. This may be reasonably explained by the fact that the legislature of 1933 had no basic figures or statistics to base an appropriation upon and because of this any appropriation made was only a rough estimate.

It is to be noted here also that in Act 248 of 1933 the

physician's, surgeon's and dental fee was to be paid by the County and not by the State. Also, the transportation of the child was to be paid three-fourths by the State and one-fourth by the County.

Doctor Fenech then turned his attention to Bill 277, an Amendment to the Afflicted Child Act 274, now known as Act 94 of 1935. This bill provides for "reasonable" compensation to physicians to be paid by the State. He commented that the Crippled Children's Commission thoroughly approved of the new bill and pointed out that it had already shown by its actions its interest in the professional care of the crippled child and its desire that the doctor be properly remunerated for his services.

An appropriation of $1,400,000.00 had previously been asked for by the Commission, but this would be quite insufficient to cover the payment to doctors provided for in the amended bill. Since Bill 274 carried no appropriation, the Commission proposed by resolution to ask the legislature for an additional appropriation to take care of these professional fees.

The Legislative Committee of the State Medical Society was invited to come before the Crippled Children's Commission at its May meeting. Immediately preceding this meeting and later present with the Legislative Committee, appeared before the Commission a Mr. Lambert who informed the Commission that he, rather unofficially perhaps, represented the Michigan State Medical Society and that the Society desired that this resolution be withdrawn. He stated that he himself or the Society would guarantee that they could and would go out and get sufficient funds. The Legislative Committee, who came in shortly, confirmed this statement, and stated that they desired that the Commission withdraw any request for an appropriation to be attached to Bill 277 at this time. The spokesman for the Legislative Committee said that it was felt by the Committee that such an addition would prevent the passage of the bill. It was definitely pointed out to the Crippled Children's Commission by the Legislative Committee that it was the desire of the State Society that the bill be passed as drawn; that the physicians would take their chances in getting their money, and that anyway the principle in the Bill was worth the sacrifice. With this statement the Commission withdrew their proposed resolution.

Following the passage of the Bill but before the Governor signed it, the doctors, through a committee, made the statement that the physicians of the State would be satisfied with 50 per cent of the existing fee schedule set up on June 4, 1934, for the payment of physicians under the Crippled Children's Act. It is Doctor Fenech's understanding that representations were made to the Governor that the medical profession would be favorable to the Bill as it stood with the full understanding that at the present time there were not sufficient funds to carry on the work for any length of time, either on the present fee bill, schedule A, or on a 50 per cent reduction from this.

And so the Bill became Act 94 of 1935. Doctor Fenech then reviewed the meetings of the Crippled Children's Commission with the Auditor General and Committee appointed by Chairman Powers of the Council.

He noted that there has been some confusion because of the careless wording of the bill which makes its interpretation difficult. He noted that the appropriation of 1935-1936 of $1,400,000.00 had been cut by the Governor (as had all others) 5 per cent, reducing it to $1,330,000.00. He further commented that a strict interpretation of the appropriation as made was difficult and that it was causing grave concern to the officers and members of the Crippled Children's Society who are concerned lest their work of years go to pieces through the failure of a specific appropriation to carry on the work with the crippled child. The situation having come to the knowledge of the officers of this Society, one can be assured that every political effort will be made to straighten out the tangle and restore the bill to the intended purpose at the time it was passed. To those of us who are equally interested in the Afflicted Child this tangle perhaps offers an opportunity for a more satisfactory operation of the Afflicted Child bill. It is understood, and Doctor Fenech confirms, that it is the intention of Governor Fitzgerald to call together representatives of this Society and the Crippled Children's Commission and other individuals who have an especial interest, in order that he may discuss with them the situation. It seems apparent that the Crippled Children's Commission are as anxious to work in harmony with the State Society as we are with them. It is hoped that out of such meeting may come some solution which will permit a satisfactory operation of the Act. In the meantime, the Crippled Children's Commission seems to have no recourse. The funds at its disposal are only sufficient to pay hospitalization and administration expenses. Though it desires to operate the Afflicted Child Act in the same high grade way that it has operated the Crippled Child Act, and give the same consideration to the Afflicted Child and to the doctor taking care of him as they have given to the Crippled Child and his surgeon, this is quite impossible except as funds are provided.

Following Doctor Fenech's talk there was a full discussion. It was felt that no action could be taken until after the meeting which it is expected the Governor will call.

Adjournment at 12 M.

BURTON R. CORBUS,
Secretary.

COUNTY SOCIETIES

MUSKEGON COUNTY

Special Meeting, August 16, 1935. Subject: "What Shall We Do About It?" (From the *Bulletin of the Muskegon County Medical Society.*)

The principal reason for this special meeting, as most of you know, is to consider what steps should be taken in regard to the arbitrary action of the Crippled Children's Commission in reducing the doctor's fee for attending afflicted children. You undoubtedly will hear the arguments presented from several different angles as to why we should or should not refuse to accept the provisions of the Afflicted Children's Act as interpreted by the Crippled Children's Commission. There are many arguments on both sides and the editor is listing them with comments, which you must remember are his personal views. Briefly the situation is as follows:

The Afflicted Child's Act was passed during the last legislature to provide for the hospitalization of the afflicted children in local hospitals rather than in the University Hospital. As the bill was not passed until after the appropriation bills had been concluded, there was no possibility of obtaining extra funds. The Legislative Committee of the State Society in order to procure the support of the Crippled Children's Commission, offered to counsel the profession to accept the Schedule A fees for a time and then 50 per cent of these fees and in event of depletion of the fund, to continue a 2 per cent of Schedule A. The bill went into immediate effect the last part of June. The Crippled Children's Commission paid the bills submitted in June at 50 per cent of the Schedule A fees and then ruled that the first of July bills would only be paid at 2 per cent rates, which means a blanket fee of a dollar per case.

Dr. Fenech, who is the only medical man on the Crippled Children's Commission, claimed that this fee was made ridiculously low in order to induce the Governor to arrange for further appropriation.

The orthopedic surgeons, directly under the Crippled Children's Commission, are still being paid their same fees.

Hospitals which are approved by the American College of Surgery are being paid $4.00 a day for these cases, other hospitals $3.25 a day, plus certain extras. The doctor is paid a dollar a case whether acute or chronic, medi-

cal or surgical, regardless of the time involved in the care.

It is up to you either to recommend to the Staffs of our hospitals to withdraw their consent to coming under the Afflicted Child's Act or to continue for an indefinite period under this set-up.

Here are a few of the arguments for continuing. The hospitals need the money. (Well, so do the doctors. I have yet to know of a hospital which will take in a case free in order to allow the doctor to collect a fee.) And again, business is picking up to a considerable extent so that the State Funds are not so vital to hospitals. And again, Muskegon County Doctors are putting in to the hospitals $20,000 to $25,000 a year on adult indigents for whom they receive no direct compensation and the society receives about a third of the regular fees. Of course, this argument in regard to the doctors' support of the hospital could be prolonged indefinitely, as it involves many angles.

The second most common argument is that if we refuse to accept these provisions, we will be throwing down the Legislative Committee. (I am sure I have a great deal of respect and have expressed my appreciation for the Legislative Committee's work, but Muskegon County had settled this question two years ago before the Legislative Committee had started to work on it. Our society settled it by establishing the principle that if any one is paid, the doctor should also be paid. I can conceive of no reason why the physicians should do free work for the State of Michigan. No other professional or business man does and many of them are paid more for State work than for private work. I am sure also that if the doctor goes ahead and takes care of these patients at a dollar a throw, that he is going to have one whopper of a time to ever get a reasonable fee out of the State. The fact that we have been saps enough to do this previously is the reason why the Crippled Children's Commission felt very magnanimous in submitting Schedule A, which is from a quarter to a half of our minimum fee schedule.)

The next argument is that if we continue being dollar a case men, the Governor will call a special meeting of the Legislature and appropriate a couple of million dollars for this service. (My reaction to this ephemeral wisp of chimerical promise is that highly expressive phrase, "Oh, yeah!" If any one can reasonably believe that a Governor who has attempted to cut down expenditures is going to go out of his way to spend more when there still are spineless saps who are afraid to demand their rightful fee for services rendered or who feel that they are currying high favor with hospital authorities by this acceptance. They probably also believe that Dr. Townsend is a reincarnation of Mohammed. I hope that the proponents of the dollar a case idea will bring up some more arguments Friday night. With one word of caution, do not let yourselves be deceived. You must either continue to accept this mandate of the Crippled Children's Commission or the staffs of the hospitals must withdraw their consent to the hospitals being under the Afflicted Children's Act.)

When Wrong is Right

A football player in a small college was extraordinarily dumb, but to the surprise of everyone, he passed all of his work, including a special examination in chemistry. The chemistry professor was asked about it, and he said, "I decided I would let him pass if he answered 50 per cent of the questions correctly.

"I asked him two questions—one he answered wrong—one right. Therefore I let him pass. The first was 'What color is blue vitriol?' He answered, 'Pink.' That time he was wrong. The other was, 'How do you make sulphuric acid?' He answered that he didn't know. That time he was right."

WOMAN'S AUXILIARY

MRS. F. T. ANDREWS, President, Kalamazoo.
MRS. F. M. DOYLE, Secretary, Kalamazoo.

Dear Auxiliary Members:

Another year has rolled around. The time is again here to renew our energy and gain new inspiration. It is not for us to question why we are organized, inasmuch as our dearly beloved and now departed Honorary President, Mrs. Caroline Bartlett Crane, saw a great need for promotion of the spirit of brotherly love.

Let us make this our best meeting. Be prepared to contribute your idea for a better organization. Come and renew old acquaintances and make new contacts.

Sault Ste. Marie is one of the most attractive playgrounds of our country.

Enthusiastically,

(MRS. F. T.) CHARLOTTE ANDREWS, *President.*

The ninth annual meeting of the Woman's Auxiliary to the Michigan State Medical Society will be held at Sault Ste. Marie, Michigan, September 23, 24, and 25, 1935.

The following proposed amendment to the Constitution is to be voted upon at the General Assembly: Art. 7, Section 2. To amend by adding after the first sentence: "The Presidents of County Societies are invited to attend these meetings."

A good attendance is desired and an interesting and entertaining program is being arranged.

(MRS. F. M.) WILMA G. DOYLE, *Secretary.*

COMMUNICATIONS

Editor, Journal of the Michigan
State Medical Society:

Thank you for permitting me to read the letter from Mr. G. E. Harriman, executive secretary of the Non-Sectarian Anti-Nazi League, in which he characterizes my address on "Heredity and Environment" as being "not only tendencious, but as definitely anti-Semitic propaganda." He also asserts that one of my statements seems to him "willfully misleading" and thinks that your "valuable journal should not be made a vehicle for propaganda of this character."

There was absolutely no intention of casting aspersions upon the Hebrew race in my address; instead I plead for education against reproduction by the *constitutionally inferior* of all racial types.

Mr. Harriman seems to be unaware of the fact that I was one of the speakers at the great mass meeting held in Madison Square Gardens protesting against the unfair treatment of the Jews during the Hitler regime.

LEWELLYS F. BARKER.

New London, N. H.
August 5, 1935.

OBITUARY

Dr. H. R. Varney

Dr. H. R. Varney of Detroit died suddenly, July 8, 1935, on the train while on his way home from his vacation. He was sixty-four years old. The cause of death was angina pectoris. Dr. Varney graduated from the Vermont College of Medicine in 1893. He specialized in dermatology and was at one time professor of dermatology and syphilology in the Detroit College of Medicine. He was a member of the American Dermatological Association and formerly a member of the International Congress of Dermatology. He was formerly on the staffs of Harper Hospital and the Children's Hospital and within a year of the time of his death he was a member of the staff of the Charles Godwin Jennings Hospital. He had retired from active practice the past year. He is survived by his wife and one adopted son.

Dr. I. L. Polozker

Dr. Isaac L. Polozker died on August 21, at his home in Detroit of cardiac disease at the age of sixty-two years. Dr. Polozker was well known to the medical and legal profession of Detroit. Born in Russia in 1873, he came to the United States in 1889, and, following pre-medical training in New York, he moved to Detroit, where he attended and graduated from the Detroit College of Medicine. Dr. Polozker was Wayne County physician from 1898 to 1907. He had taught in the Detroit College of Medicine since his graduation in 1897. His early years were largely spent in pediatrics, but he eventually turned his attention to psychiatry. At the time of his death, he was Recorder's Court psychiatrist. Dr. Polozker had been on the staffs of St. Mary's, Providence, Eloise and Receiving Hospitals. Dr. Polozker was a member of the Wayne County, Michigan State and American Medical Associations. He is survived by his wife, three brothers, Isador H., Samuel F. and Dr. J. H. Polozker, and a sister, Mrs. Samuel J. Eder, all of Detroit.

Dr. Edward J. Dougher

Dr. Edward J. Dougher, dean of the medical profession in Midland County, died at Mercy Hospital, Bay City, on July 26, 1935, at the age of seventy-one years.

Dr. Dougher was born at Pittston, Pennsylvania, on September 18, 1863, and was a graduate from Bloomsburg Normal College Bloomsburg, Pa. After graduation he served as instructor at this institution for five years, before deciding to study medicine. He attended the Baltimore Medical College, Baltimore, Md., from which institution he graduated in 1898, and began to practice his profession at Marquette, Michigan, in 1899. After spending a year at Marquette, he moved to Midland, where he practiced for the past thirty-five years. He was married to Miss Ellen E. Collins, of Winthrop, Iowa, in 1916.

Dr. Dougher was always an active member of the Midland County Medical Society and for the past many years has been its efficient secretary. He was also a member of the Michigan State Medical Society. He was held in high esteem by the other members of his profession, and through his many years of practice he endeared himself to the community through his untiring efforts among his many patients. He was always deeply interested in the welfare of the community and took an active part in the civic affairs of the city and county.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

ALLOTMENTS UNDER THE SOCIAL SECURITY ACT*

The Social Security Act, recently passed by the U. S. Congress, makes available for each fiscal year, beginning with the fiscal year ending June 30, 1936, the sum of $8,000,000 to be used, in the language of the Act, "for the purpose of assisting states, counties, health districts, and other political subdivisions of the states in establishing and maintaining adequate public health services, including the training of personnel for state and local health work."

Under the terms of the Act the amounts of the allotments are to be determined on the basis of population, special health problems, and financial needs of the several states.

Fifty per cent of the total fund, or $4,000,000, shall be allocated on a population basis to the fifty-one states and territories. One-half of this amount is to be set aside for evenly matching existing appropriations of public funds for public health work, the remainder to be used for matching new appropriations; the latter provision, however, may be ignored if substantial appropriations for subsidizing local health work are already provided by states. These funds are to help fill the gaps in the basic minimum organization requirements and to provide a well-rounded program.

Twenty per cent of the total fund, or $1,600,000, will be allocated on the basis of financial needs. Five per cent of this sum will be distributed evenly between the states and territories; fifteen per cent, $1,200,000, will be placed in an "equalization fund" and distributed to states least able to provide funds for health service, the need being determined on the basis of the financial ability of the state, as expressed in terms of per capita income. The money from the equalization fund must be expended exclusively for local health service and need not be matched by state funds.

For those states having special health problems a sum of $1,200,000 will be set aside. In allocating these funds the word "needs" is interpreted to mean necessity arising out of high morbidity or mortality from particular causes, the existence of special health problems such as malaria, plague, hookworm, silicosis and similar geographically limited diseases or other conditions that result in inequality of exposure to public health hazards. Allocations from this fund must be matched by state funds.

The remaining fifteen per cent of the total fund, $1,200,000, is to be expended for the training of personnel, to fill quickly the gap that will exist between the trained personnel available and that demanded by the increased number of positions. This money is to be used in the establishment or strengthening of training centers and to pay living stipends and travelling expenses of trainees while in training and for a reasonable period preceding employment.

The Surgeon General of the Public Health Service determines the amount to be paid to each state. The moneys so paid shall be expended in accordance with plans presented by the State Department of Health and approved by the Surgeon General of the Public Health Service.

*EDITOR'S NOTE—A congressional filibuster prevented the passage of the necessary appropriation. It is expected, however, that funds will be obtainable from other sources.

In addition to the amounts enumerated above, to be expended directly for rural health service, an annual grant of $3,800,000 is made for the extension and improvement of services for promoting the health of mothers and children; a grant of $24,750,000 for aid to dependent children for the year ending June 30, 1936, and for each year thereafter a sum sufficient to carry out the provisions of the act; an annual grant of $2,850,000 for the care of crippled children.

The money for maternal and child welfare will be expended especially for services in rural areas. The basis of allotment for these funds is a direct grant to each state of $20,000 and such part of $1,800,000 as the number of live births in the state bears to the total number of live births in the United States. In addition to these allotments, $980,000 will be allotted according to the financial need of the state, for assistance in carrying out its state plan, as determined by the number of live births.

The plans for maternal and child health services provide for financial participation by the state and are administered by the state health department, after approval by the U. S. Children's Bureau.

C. C. S.

GENERAL NEWS AND ANNOUNCEMENTS

Roentgen Therapy of Cancer

Dr. Henri Coutard, chief of the department of roentgentherapy of cancer at the Curie Institute, University of Paris, France, will deliver the twelfth Lewis Linn McArthur lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago, in the theater of the Chicago Woman's Club, 72 East Eleventh Street, at eight o'clock on Tuesday evening, October 1. The subject of his illustrated lecture will be, "The Conception of Periodicity as a Possible Directing Factor in the Roentgentherapy of Cancer."

Doctors' Cruise to Sault Ste. Marie, September 21 to 26, 1935

Six days on the S.S. Hamonic.

Four days out of your office.

A vacation.

Entertainment on board boat and no concern about hotel accommodations.

The total cost $57.50 per person—the boat is your hotel.

There is still an opportunity to make reservations if you act quickly.

Reservations should be made through the Wayne County Medical Society.

To Members of House of Delegates

A great deal of necessary business will be under serious consideration of the House of Delegates. It is desirable that all business be transacted in as complete a manner as possible. So many problems are before the Society that much study and thought will be required for appropriate action. It is recommended that each and every delegate familiarize himself with the facts connected with the various problems, before the opening day of the session.

The various committee members will be notified of appointments before the meeting and must be prepared to render complete reports at the earliest possible moment. All resolutions and reports are required by a previous ruling to be in triplicate. Members will kindly observe this regulation. One copy for the Secretary, one for the Stenotype operator and one for the chairman of the reference committee. Credentials of delegates should be properly executed and presented to the committee on credentials before 3:00 P. M. of September 23rd, the opening hour of the session.

Delegates who may have local problems, about which recommendations and support are desired, are earnestly requested to present them to the House of Delegates, that a united profession may contribute to the welfare of the members of the Society.

(Signed) HENRY A. LUCE,
Speaker House of Delegates.

Seventh Annual Training Course For Medical Reservists At The Mayo Clinic

The two weeks' period, October 6 to 20, 1935, has been selected for the Seventh Annual Training Course for Medical Department Reservists of the United States Army and Navy, at the Mayo Clinic, Rochester, Minnesota.

The program will follow the plan which has been so successful in past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoons and evenings will be devoted to Medico-Military subjects.

The Staff and Faculty of the Mayo Clinic will present the professional training, while the Medico-Military Program will be under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

Enrollment is open to all Army and Navy Reservists of Medical Departments, in good standing. Applications should be submitted to the Surgeon, Seventh Corps Area, Omaha, Nebraska, or the Surgeon, Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

The Surgeon Generals of the Army, the Navy and the Public Health Service have all signified their desire and intention of being present during at least a portion of the course.

Inter-State Postgraduate Medical Association of North America

The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the beautiful Masonic Temple, Detroit, Michigan, October 14, 15, 16, 17 and 18, 1935, with pre-assembly clinics on Saturday, October 12, and post-assembly clinics Saturday, October 19, in the Detroit Hospitals.

The Association through its officers and members of the program committee extends a very cordial invitation to all physicians in good standing in their State and Provincial Medical Societies to attend the Assembly. An unusual clinical and didactic program including all branches of medicine and surgery and the specialties has been arranged by the program committee.

A most excellent opportunity for an intensive week of postgraduate medical instruction is offered by a very large group of acknowledged leaders in the profession.

With a great deal of pride and satisfaction, we call your attention to the list of distinguished teachers and clinicians who will take part on the program which appears on page xiv of the advertising section of this JOURNAL.

Registration fee of $5.00 admits all members of the profession in good standing.

DR. CHARLES H. MAYO, *President*,
Rochester, Minn.

DR. GEORGE CRILE, *Chairman*, Program Committee,
Cleveland, Ohio.

DR. WILLIAM B. PECK, Managing-Director,
Freeport, Ill.